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Original Correspondence.

ON THE DISEASES AND DURATION OF MINERS' LIVES

SIR,—Much having been recently said and written on the diseases and length of the lives of Cornish miners, by which the attention of thoughtful men has been directed to the consideration of that very important subject, is my apology for begging the favour of troubling you with the following remarks for the consideration of those who wish to form a correct opinion of the average length of the lives of that interesting portion of the population of the British empire. Your readers will at once admit that it is essential to the arriving at truth in this as in any other matter that sufficient data should be obtained, in order to facilitate which I beg to suggest the propriety—indeed the necessity—of having answers to the following questions:

1. The number of persons working underground, with their ages, in any district comprising several mines.
2. The number and ages of those who did work underground and are now employed as mine agents, pitmen, timbermen, enginemen, and other engagements on the surface of the mines in the same district.
3. The number and the ages of those who formerly worked underground in that district who are now engaged in some business, keeping small shops, or cultivating small farms, &c.
4. The number and the ages of those still living who have emigrated to our colonies, or to foreign lands, during the last twenty years, and of those who have returned from fields of successful enterprise.

I doubt if any class of labourers on the earth has so large a proportion as the Cornish miners which move out of the sphere they have been trained in to occupy improved positions in civil society, and by emigrating to endeavour to benefit themselves and their families. If this important matter be fairly looked at in the light which can be had in the way indicated above, I am inclined to think the average length of the lives of miners in the Camborne district, and in some others also, would be found to be but little short of forty years, instead of thirty, as is given by some who have only taken a very partial view of the matter.

C. THOMAS.

Dolcoath Mine, Camborne, Feb. 12.

MINERS' ASSOCIATION OF CORNWALL AND DEVON.

SIR,—History is an important branch of study, and to the Cornish miner it would doubtless be interesting to trace the history, so far as can be ascertained, of the rise and progress of Cornish mining, from the open cuttings on the backs of the lode through the various improvements up to the present time. It would still be more interesting could we trace the ideas that have prevailed amongst miners relative to the formation of mineral deposits: these were oral until the publication of the *Mining Journal*, through the medium of which various persons have expressed their views at sundry times, but it was not until 1859, when Capt. Charles Thomas published his lectures on the "Geology of Cornwall and Devon," that anything of a definite form which was of a real practical nature for the benefit of the miner appeared in print. These for awhile stirred up a host of oppositionists among miners professionally and miners nominally, who were so blinded by prejudice that they would not examine for themselves, and see whether or not they were true; consequently to them they were a stumbling block. To the mere literary theorist they were foolishness, because they were written in a style intelligible to the reader, unvarnished, and so condensed as to be of great service to those whose minds were eager after truth.

When the Miners' Association was formed, under such favourable auspices, I really expected the subject of mineral formations would have become a prominent part of the study to which the miner would be directed, but with two exceptions I have hitherto looked in vain for anything of the kind; these two, Mr. Simmons, as well as the author of the paper on the St. Austell mining district, really deserved the thanks that were imparted to them. Mr. Reginald Grylls has long promised to favour the mining world with his views on mineral formations, the appearance of which is eagerly looked for, but hitherto they have been withheld. We have, however, been favoured with some good practical papers from our Cornish engineers, to whom we tender our hearty thanks, but in reading some other papers, especially one or two read at the meeting held at Falmouth, I was forcibly reminded of a couplet I somewhere met with,—

"Tis pleasant to see one's name in print,
A book is a book if there's nothing in't."

To the practical miner I would say, do not let us waste our time in studiously enquiring into the chemical properties of various kind of strata, and in perplexing our minds in trying to ascertain what affinity they have for various kinds of mineral, but let us aim at the really useful part of geology, and try to increase our knowledge by showing the effect produced; and by the increase of knowledge of indications that is in store for the enquiring mind, combined with a skillful and economical appliance of machinery, let us endeavour to render some essential service, by endeavouring to make mines pay cost, and eventually to make a profit, whereas by the old system they would only work at a loss, and by so doing a lasting benefit will be conferred on the world at large. By the study of the higher branches of chemistry, and the futile imaginations of the mere theorist, we shall only bewilder our minds to no purpose. Surely it becomes all who have the real interest of the miner at heart to further the practical part of geology to the utmost, there being mines now working, and some of them managed by men of unquestionable integrity, but who, not taking heed to the laws afforded by Nature, are wasting money in that which will assuredly turn up a blank, and which ought to be applied to a better purpose.

Camborne, Feb. 8.

MINE AGENT.

THE HARTLEY NEW PIT CATASTROPHE.

SIR,—I pass over the questionable taste of the introductory observations of "A Pitman," and, as he appears desirous of having some explanation upon the following questions, I feel in duty bound to furnish it. He asks for an example of a shaft being sunk upon the principle of having two separate circular shafts formed out of one by the operation of bricking, and who advised it. My answer is, that it was sunk under the advice of a viewer from the North of England, and that the colliery is situated at Bredbury, in Cheshire; and I may now add that Mr. Jowett, the late proprietor, often regretted his weakness in consenting to the system being employed, and has often stated that it had been far more expensive than the sinking of two separate shafts would have been. With respect to my modesty in declaring that I possessed no knowledge of the cost of sinking square shafts, and bratticing others, I can only observe that I might have had a more intimate knowledge of this branch of colliery management, had I not on one occasion threatened to leave my situation rather than consent to the system of working a colliery with only one shaft: but, in justice to my employers, it is necessary to state that they never proposed such a thing; on the other hand, they are the most uncompromising advocates of working all collieries with two or more shafts. With respect to the sinking of two circular shafts, each 11 feet diameter, at the cost of 71. 10s. per lineal yard, permit me to say that if I have not been explicit enough for your correspondent to understand what is meant by "everything included," I beg to inform him that it includes the whole expense incurred in the operations of sinking and bricking the shafts, winding the water, sharpening the tools, wear and tear of ropes, machinery, &c., and the cost of fuel. What I mean by useless expenditure is the money that is too often expended in a lavish manner in erecting machinery, &c., of a more expensive character than is required, and in doing everything rather to please the eye than to serve a more substantial purpose. In one case that has recently come under my notice, a shaft was sunk to a considerable depth, of 10 ft. diameter, and the walls set in cement; but from some cause it was thought that the shaft was too small, and, prior to raising a single ton of coal, operations were recommenced at the surface, and the shaft is in course of being sunk of greater diameter. If space would permit, many other instances of a like character might be given.

If your correspondent had read the letter he professes to criticise with ordinary care, he would have found that my estimate of 12s. per yard was not intended to cover the expense of tubbing, and that the quantity of water named by me was 1000 gallons per hour, and not 100 gallons. If we had been favoured with an outline of the system of raising the 800 tons of coal per day by one shaft at Cramlington Colliery, and the depth and size of the shaft, it would, perhaps, have been necessary to have entered into this part of the subject. In the absence of such information, I shall pass it over, by simply observing that if my remarks had been carefully read it would have been seen that I advocate having two ropes in one shaft. The explosions referred to occurred within 11 months of each other, at one colliery, under the same viewer, he being from the North. With this information, and a very slight effort on his own part, I hope your correspondent will be enabled to satisfy himself as to the whereabouts of the colliery in question.

I candidly admit my ignorance upon the subject of changing buckets

and doing any repairs that may be required to the pumps, rods, &c., by means of "apparatus for ascending and descending the pump end when necessary," and also of what is meant by the "pump end." If we take into consideration the fact that Hartley Pit was only 12 feet diameter before being bratticed, it will at once be seen what space will be left to do any repairs in the shaft whilst the operation of winding coal is going on.

I neither said or wished it to be understood that the liability is greater for the guide-rods or machinery connected with raising coal to be deranged in one shaft than in two, but providing two separate engines are employed, and each shaft rendered independent of the other. I think that even "A Pitman" must admit that the risk of having a colliery temporarily suspended is much greater where only one shaft is employed than when two shafts are used.

In my communication of the first inst. I did not profess to raise all the objections that might have been raised against the system of working a colliery upon such a principle as the one at Hartley, or I should have shown the impossibility of allowing each workman a sufficiency of pure air to maintain them in health for any lengthy period, in consequence of the limited area of the upcast and downcast; but as one solitary and nameless individual only appears to dispute anything I have said against the system, and he even partially admits the necessity of dispensing with such a rude system, I shall not trespass upon your space by offering any further remarks, beyond suggesting that every mining locality should lose no time in petitioning Parliament to take measures to prevent any colliery being worked in future with only one shaft.

Jos. GOODWIN.

Feb. 10.

THE HARTLEY NEW PIT CATASTROPHE.

SIR,—This fearful sacrifice of human life having struck the attention of a whole people, from our beloved Queen to the humblest peasant, the nation's sympathies are at once awakened, and all the widows and orphans are immediately provided for. This is as it should be, but while lavishing our bounty upon the dependents on the sufferers in the present instance, let us not forget that by the time the present year has completed its course six times the number that perished there will have suffered violent deaths in our collieries and metallic mines, leaving a proportionate number of distressed widows and fatherless children to lament their loss, without even the consolation, small as it may be, of national sympathy or material support. Is it not possible that a nation's sympathies, once awakened to the sufferings of those engaged in winning their every-day comforts from the dark caverns of the earth, might be kept active? Is it only when hatcombs fall by the grim monster that sympathy can be awakened, and the many dropping in ones, twos, threes, &c., awaken no feeling, and gain for their bereaved no support? The same power brought into operation in the present instance might, I think, be used to establish a permanent institution, properly directing those charitable streams ever ready to flow forth at the cry of bereavement and distress into one efficient channel, by which much suffering and want might be alleviated. Every day of the miner's life, as he goes forth from his family and his scanty morning meal, he understands full well that he takes his life in his hand, and may never more return. There must be men to fill our dangerous as well as other occupations. We call for soldiers to fight our battles, and they go forth to victory and to death. We call for seamen to carry on our commerce on the deep, and they go forth, doing our bidding amid all the dangers there. We must have coals to supply our thousands of engines and millions of hearths; iron to build our ships and locomotives with; copper, tin, and lead for a thousand and one purposes; and the miner comes forth, by his continuous labour giving us all these necessities and comforts, regardless of the dangers surrounding him.

Mid fearful dangers round of fire and flood
He carves his way; nor spares his own life blood
To win his children's bread. When huge rocks fall,
And their reverberating thunders roll
Along the caverned sides of that dark cave,
Or pent up in the mine, no power to save
Him from that sure insinuating flood
That creeps upon his narrowing abode.
Or sometimes stealing on its treacherous way
The noxious gas will overpower and lay
That strong man low. Or when the hidden spark
Will start upon the blast, and leave a dark,
An eyeless, shattered mass: quick death to whom,
God willing, would indeed become a boon.
When thus in the dark mine he falls alone,
Or when his fellows share his fate, his own
So lov'd, so rude bereft, his latest thought
Obtains. With dying hand that miner wrote
(With scarcely strength its fastening to unclasp)
To her he lov'd, his farewell on his lamp.

Well knowing that many of those brave sons of toil must every day perish, might we not do something by which when the last agonising moment comes, the greatest agony of all—a consciousness of the coming distress of their widows and orphans—might be somewhat mitigated? For the sufferers in the Hartley Colliery it has been announced that further subscriptions are unnecessary. Instead of shutting up that flood of human kindness thus overflowing, might not its streams be directed into a proper channel for the relief of those whose bread-winners, although living to-day, will assuredly suddenly perish to-morrow? England enjoys many blessings. Many of her people are rich, and in full enjoyment of everything this world can give them. But amongst all the blessings of this great country nothing conduces so much to enrich her people as her abundance of mineral wealth, which wealth might as well never have existed were there not an industrial population, in some degree reckless of danger, to win it from the dark depths where it is found. The miner passes the greater part of his time under the earth, enduring the most intense severity of labour, well knowing that, as a general rule, all he can expect in return will be just sufficient to keep him and his family in existence, and that when he dies he leaves all dependent on him entirely unprovided for. Ought not something to be done by a country so powerful and so blessed for those who thus give life and limb for the emolument of the more favoured of her people? In the case of the painful accident at Hartley New Pit, our beloved Queen having set the example, it was speedily and effectively followed by all the great and noble, and by every class in the land. The same influence would as easily afford relief to the sufferers whose interests we are now advocating. Oh! for the eloquence of a Demosthenes to advocate this cause in that thrilling language which should ensure a continuance of sympathy with the miner in his toil, in his hours of danger, of mutilation, and of Death.

W. TREGAY.

Redruth, Feb. 10.

THE HARTLEY COLLIERY ACCIDENT.

SIR,—I am not amongst those when serious accidents occur who attribute everything to divine Providence: we all know that but for the intervention of that Providence serious calamities would often befall us in various shapes. In the Hartley Colliery calamity, as well as in nearly all the serious explosions which occur from time to time in the North (which explosions, by-the-by, never occur but in mines worked on the plans of the northern collieries), arise from a barbarous infraction of every law of nature, so far as mining is concerned—the one shaft, the defective system of brattices. The stall and pillar method of working 3 ft. and 5 ft. veins of coal, which admits of the worst class or system of ventilation, where the men have to work in the oven-like stalls, to say nothing of the great waste of coal, all call for an immediate change. In 1856 I had occasion to go over a Shropshire colliery with a Welsh mining engineer; he was astounded at the simplicity and efficient manner in which these mines are worked—the absence of expensive driftways for air, the perfection of the ventilation, and at the comfort with which the colliers and miners pursued their labours. He found no goafs, no coal left to support the superstratum, and, more than all, he was astounded at the cheap rate the coals were wrought. All the collieries in Shropshire are worked on what is known as the long wall system, with an "up and down shaft" for ventilation, with a current of air continually sweeping through the whole of the works from end to end, carrying off all impurities as they are generated in the workings, renders the mines for the colliers as safe as any other branch of industry in England. The northern colliery owners object to sinking two shafts on the plea of expense, and consequently sink one shaft, which costs infinitely more than a pair of shafts sunk in a proper manner. This shaft they divide and re-divide at an enormous expense, to make it available for ventilation. They case it with timber, which is always falling to pieces and getting rotten; then the eternal expense of repairing the brattices, whereas, if they were to sink two shafts, and case them with good brickwork, all this expense and labour would be obviated. We frequently hear of the Newcastle colliers, and of the splendid system of working their mines; but, to tell the truth, their system is the most barbarous in existence, the most slovenly that can be devised; there is neither comfort for the workmen or economy in the system of working. It appears that these shafts cost from 15s. to 20s. per yard in sinking, inclusive of timbering and bratticing. The time

it must take to sink one of these shafts must be enormous; but if they sunk two circular shafts, 9 ft. in the clear, they would be run down in infinitely less time, and at a cost of about 6l. to 7l. per yard each; then, with a steam engine between the two, they have two good winding-shafts, out of which they can draw any amount of coal. If they have water in their works they can use one for the pumping-engine, as well as for drawing coal. But in the present system the whole affair is crowded into one small space, adding danger to danger, and confusion to confusion, while, should an explosion occur, nothing but death awaits the unfortunate workmen—young and old, and their widows and orphans thrown destitute on the world; and if it were not for the exertions and generosity of their countrymen nothing but the workhouse is open to them.

The northern coalowners say, if you ask them why they have not sunk a second shaft—Oh, but look at the expense! Well, they must see that doctrine is now exploded, and that it is cheaper to sink two shafts than to sink one, if they go to work like other sensible people, and get rid of their stupid northern prejudices and supposed superiority. But by what rule of calculation was a large cast-iron beam placed over a shaft which men had to descend and ascend? Where were the cross heads and catches which should have caught the beam, and so prevented it falling even a single foot after it broke? There could have been no protection of any kind for this purpose—when the beam broke it slipped into the shaft. A more slovenly affair cannot possibly be imagined. Again, it appears to me the beam broke in its downward stroke, when it had nothing but the weight of the pump-rods on it. If it had broke in the up stroke the other end would have knocked out the bottom of the cylinder, and have almost shaken the engine-house down; but at the instant the engine-driver stated, "as soon as the beam broke I ran and stopped the engine," clearly proving, I think, that the beam broke in the downward stroke. If the beam had broke in the up stroke the engine would have stopped itself with a vengeance. But this so-called economy has now done its work; the outraged laws of nature have been vindicated, and its retribution has fallen on the 204 innocent victims, their families, and the nation. Parliament must interfere, and it is to be hoped the public will second the efforts of the colliers in the district to obtain redress for their terrible grievances.

G. SHEPHERD, M.E.

26, Throgmorton-street, London, E.C.

P.S.—Where a pumping-engine is in operation over a winding-shaft the engine ought to be stopped while the men both descend and ascend the shaft; this rule ought to be rigidly enforced.

THE NEW HARTLEY CATASTROPHE.

SIR,—In the experimental illustrations during my lecture on Friday evening last, at St. James's Hall, I showed certain results with carbonic acid gas different from what might, *prima facie*, be expected. As the better acquaintance with this deadly enemy of the miners may be useful in any subsequent difficulty, you may, perhaps, not deem it unworthy an insertion in your *Journal*. My apparatus, a glass vessel, represented the low of a mine with two vertical shafts; on dropping a candle to the bottom of one of the shafts I illustrated the operation of a furnace driving the air into the upcast shaft; after withdrawing my candle I charged the level of the mine with carbonic acid gas, which from its superior gravity retained its position at the bottom of the shafts, where it extinguished my candle on fresh insertion. I then caused a current of ventilation, which I suddenly suspended, by stopping the top of the upcast shaft, while still containing atmospheric air, just as the accumulated debris at Hartley stopped the furnace-drift. After a short interval the carbonic acid gas, having acquired momentum, displaced the air, and took its position at the top of the shaft, while the bottom of the shaft contained pure and lighter air, as was proved by my candle now going out at the top of the shaft. I infer from this that the current of ventilation, although suddenly suspended by the debris, caused the carbonic acid gas to ascend till arrested, as in a *cul-de-sac*, in the Yard seam and furnace drift; and that, therefore, the miners sought of all others the most dangerous locality—running into the gas, in short, while endeavouring to escape from it; whereas had they avoided it a few hours longer it would probably have found its natural level again. In the position they took they would also unquestionably encounter the carbonic oxide from the furnace. Might not our miners be taught as drilled as our volunteers are, that they might know how to contend with the enemies when occasion arises?

I also illustrated clearly by my diagrams that instead of the fearful delay consequent on removing the debris, each shattered portion having to be drawn up, and the consequent risk to the sinkers from the unsafe state of the shaft, two of Peto's or Brassey's navies would have made the way to the men in a few hours, by cutting a passage at right angles with the shaft, and thence sinking a fresh aperture to the furnace drift beneath them, they being perfectly sheltered all the time, what they dug out being heaped on to the debris, and the accumulating water, if necessary, drawn up in buckets.

In the first of these cases the men could not have done anything for their own release, as they would be rendered powerless by the gas.

Oakley-st., Chelsea.

JOHN S. PHENÉ.

COLLIERY VENTILATION—MR. COLWELL'S SYSTEM.

SIR,—According to promise, conveyed in my letter of the 5th inst., will now endeavour to simplify, and explain, my humble views of what I believe to be fallacious in the system of "furnace ventilation," now so pre-dominantly in use, as well as all other means of traction, and consequently "expansion," of the atmosphere in coal mines, as compared with propulsion and compression, not only as regards the question of explosions, but the important consideration of the great deficiency of pure air for the respiration of the miner underground, which, according to recent statistics, has reduced the average age of such operatives to 27, compared to 44 as that of the agricultural labourer.

The limited space to which I must necessarily confine my arguments in your columns precludes the possibility of my quoting acknowledged authorities to confirm my statements in detail, as to existing evils and abuses, which alike require to be remedied, for the sake of brevity I will take the following propositions as admitted:—
1. That more air is needed, as a general rule, if it can be obtained without increasing the speed of the current.—2. That in every colliery in the kingdom the air is more stagnant in some parts than in others, less filled in places remote from the main drift, with explosive and deleterious gases are mostly given off, or accumulate, and where it is most difficult to obtain the counteraction of the natural pressure of the atmosphere.—3. That in many mines the coal is worked to a considerably greater height than the average dimensions of the ventilating current. That undulations of the roof, the falls, occasion immense "swellings," in which light and dangerous gases abound, in the absence of artificial means to sweep them occasionally into the passing stream of expanded air. That sundry spaces exist in which these dreaded enemies may again deposit themselves, unobserved, between their former receptacles and exit,—and hence a source of great danger.—4. That if the men dare not use an unprotected light to enable them to earn their daily bread, the atmosphere of some such mines is unfit for human respiration, particularly as the labour of such operatives entails the necessity of the quantity of air for breathing purposes, than is required by men in a quietest state.—5. That atmospheric changes upon the surface quickly operate upon the air below, with a fall in the barometer, and, consequently, lightened internal pressure of the atmosphere, gas is acknowledged to be discharged abundantly from goaves, blowers, and other places, and the more so when, with such a fall in the barometer, a rise in thermometer occurs. And it is further admitted that upon a contrary change, when the internal pressure of the air is increased, the gas recedes from the superior force, when then penetrates the very holes which a few minutes before were discharging volumes of deadly vapour.

In such a paper as the *Mining Journal* it would be needless for me to describe the weight, pressure, and elasticity of the air, or the relative specific gravity of the various gases with which the miner has to contend; but as expansion is the inevitable result of heat, and heat being at present inseparable from the ordinary working of deep and extensive collieries, the first question appears to me to be whether this can be lessened, or not prevented? In the next place, can a colliery be filled to compression? and if so, can the air be circulated as well, or better, than under the present means adopted? Would the entire atmosphere of the mine be better suited to the health and comfort of the miner? Would the risk of sudden death or mutilation be reduced? Would the necessity for more shafts be greatly obviated? And lastly, would the continual drawing of the poor pitmen's wives and families be removed? And to all these interrogatories confidently and fearlessly answer in the affirmative! How, then, it will be asked, can all these blessings be accomplished? And it now becomes my privileged duty to lay before the public the result of my common-sense interpretation of the laws of nature, and philosophy bearing upon this all-important subject, coupled with, not only minor experiments in models, but by actual demonstration, on a limited scale, at the Montague Colliery, Scotland.

As collieries differ in depth and extent—some fiery and others not; some ventilated by means of a single shaft, others with more than one—the difficulty I experience in defining the adaptation of my plans may be easily imagined, and to attempt a fixed rule for all would be simply absurd. I entreat, therefore, of all interested in the subject, not only to listen to reason, but to reflect before they reject or condemn, which many are too apt to do in all cases of suggested improvements upon what they vainly esteem perfection. In the first place, however, it must be determined what degree of compression will render the escape of gas harmless; but, in ascertaining this, due regard must be had to the health and comfort of the miner. Some say you cannot have too much air, but there is a maximum, beyond which it would be unnecessary to go. A desired degree of compression can be obtained by the common fan, as I believe it can, and there would be no need of expensive machinery for propulsion; if not, there are well-known means of obtaining an unlimited supply. For instance, by simply reversing the valves of Struve's patent air-pump; but bearing in mind that it will no longer be a question of great speed through the main air-ways only, the additional quantity of its equal spread throughout the entire ramifications of the whole, is, to my mind, the principal consideration; and as none will be permitted to pass away, except by fissures, cracks, chinks, blowers, goaves, &c. (from which the gas had previously escaped) until every part is filled to the desired extent of air, I apprehend no extensive power will be needed.

Assuming, then, that so far I have made myself understood, I next propose to

air from the fan or pump to a chamber near the pit bottom by means of a bitumen, or malleable iron-pipe, of some such diameter as that used at Hartley New Colliery for pumping water; a valve to be placed within such chamber, to prevent the escape of air, in case of the cessation of supply by the fan or other stoppage of the main-pipe. The air to be conveyed from such chamber, in the first instance, by a passage running parallel with the main roadway, now traversed by man and horse, a sufficient distance to admit of three doors of equal space from each other, according to the requirements of the ordinary work, and beyond the inner one of which the air should be admitted from its first receptacle.

By this arrangement it will be obvious that the natural tendency of the current will be from such inner door towards its place of exit, when the valve at the apex is permitted to set, and that upon each passing train of trucks, &c., no more air will be lost than the difference between the ordinary pressure of the atmosphere, in its relative space between the second and third doors, as compared with the degree of compression beyond the inner door; but no two of such doors to be opened at one time, and which would be but little precaution, as some power would be necessary to open such door in the absence of an appliance for easy regulation, to be hereafter described in detail. The air taken from the interior might be conducted through the "thill," or floor of the station, to the working shaft, and more, if necessary, by means of very small apertures in the first receiver or "air-chamber." Another chamber should be formed near the coast, and as the air must necessarily penetrate the grooves, distinct return air-ways from these should be made, remote from any passages to be traversed by men or boys, if necessary, I believe that in some mines the face of the goaf may be made the last point of the atmospheric pressure, and thus to conduct the whole of the passing current through the goaf to the upcast, through passages sealed from intrusion by the natives, and into which no light need ever enter.

It is now necessary to speak of the proposed upcast; and instead of more space being required for the exit than the entrance of the air, as is now absolutely necessary, and some cases to the extent of two-thirds of an enormous shaft, I believe that a metallic pipe, of a few inches diameter, will be ample for the liberation of the atmosphere when under compression; and hence not only an immense saving of space, but a corresponding saving of future expense in the sinking of shafts in general. The valve in this case be upon the surface, beyond the reach of idle curiosity or possibility of being tampered with, and which may be varied in form to suit the tastes of owners or viewers, and regulated to the degree of the required internal and upward pressure. From moment I presume the discharge of air would be in the exact ratio of the supply; at every inch of the whole interior of the mine would then be subject alike to whatever resistance may be found necessary to apply for the prevention of the emission of explosive and deleterious gases, and so continue from day to day.

As I have already alluded to the necessity of more shafts being obtained, if "explosions" can be prevented, it would be well to maintain the present party wall of coal between every colliery working the same seam, but if this be limited (in the centre) to yards by 3 feet in some known spot, free from goaf, so as to form a passage if necessary, and the difference of space filled with small coal and closed on each side with doors, there would be but little obstruction to the escape of all who might be accidentally imprisoned within one mine, as they could thus be quickly released by access from the adjoining colliery.

I have unavoidably omitted some minor details, together with the evidence on which I rely to remove all scruples as to the fallacy of present practices, still my humble views are submitted for mature consideration and optional adoption, if found on that to be correct in principle; and if not sufficiently defined, I shall be happy to supply any additional information which may be sought in the same spirit with which I have hitherto been actuated, in my humble efforts to protect the lives, and to ameliorate the condition, of all employed in the coal and ironstone mines of the country.

Belvedere-place, Southwark, Feb. 12. C. COLWELL, author of *Money versus Life*. N.B. I last week inadvertently included the fee who were killed in the shaft with those destroyed by foul air; I, therefore, intended to have said 199, instead of 204.

SIMPLE TACKLE FOR DRAWING FROM MINES.

Sir,—Your correspondent "X," in the Journal of Feb. 1, writing on this subject, asks whether some such means as he suggests could not be adopted so as to draw stuff from mines on a more economical principle than by steam-power, water-wheel, or horse labour? Undoubtedly it can be done. Some such plan as pointed out I have had in contemplation for some time, and have the diagrams, and part of a model, which I hope very shortly to bring to perfection. It is on the incline-plane principle, and will draw either kibles or skips. I beg to inform "X," that in his plan, as laid down by him, there is one great difficulty which he has not overcome—the sending down the kibble, or skip, after it is drawn to surface and discharged of its load. He has filled his box with water, the wagon (which of necessity must be had to fix the box on), box, and water have gone down the incline, and the kibble drawn to surface; but then this kibble must be sent down again for another load. But how is this to be done, seeing that the wagon, water-box, and probably 100 fathoms of rope or chain, which will weigh, perhaps, twice the weight of the empty kibble, must be drawn up the incline again? Now, the little machine—a model of which I am in course of making—will overcome all those difficulties, and which, I calculate, will draw the same weight of stuff in eight hours, with one-third the quantity of water that it would take to draw it with a powerful water-wheel. My object has been to find out some plan to do the same amount of work, with less water, than by the ordinary means of water-wheels. Suppose there was a small stream of water that could be brought on the top of an incline plane that did not discharge more than 50 cwt. of water per minute, and the shaft to be drawn from was 50 fms. deep, the weight of the kibble to be 4 cwt., 50 fathoms of chain 9 cwt., and the kibble of stuff 10 cwt.—total weight to be lifted 23 cwt. Supposing the weight of the incline wagon and water-tub to be 7 cwt., this could leave 16 cwt. to be started from the bottom of the shaft. Then, suppose your water-box to contain 25 cwt. of water, you would have 5 cwt. of water to make up for friction, &c. Then place a large cistern at the top of your incline, right over where your water-tub comes up; this cistern would be reserving the water while the water-box was going down and up again; and supposing it took the 25 cwt. of water to draw the kibble up; by having 5 cwt. of water per minute coming in the cistern, you could by that means draw a kibble every five minutes, or 144 kibles. At 72 tons of stuff, in twelve hours, by a small supply of water that would not lift the kibble from the bottom by a machine attached to a wheel of 40 feet diameter; and where there would not be large quantities of stuff to draw, a reservoir might be made so as to pool this water by night. Suppose, again, your supply of water should abate one-half, you could still draw six kibles per hour, &c.; but if dependent on drawing with a wheel this quantity of water would be useless. The only two things necessary for a foundation, or main-spring of power, is a moderately steep incline plane as deep as your shaft, and a small stream of water brought on the top of it; every other difficulty, such as sending the kibble down, &c., is very easily overcome. *Newcastle-Emlyn, Feb. 6.* R. SANDERS.

BASTIER'S PATENT CHAIN PUMP.

(Translation) Sir,—As some of your correspondents seem to entertain the opinion that my pump has not yet had a sufficient trial to enable a conclusion as to its merits being arrived at, will you permit me to offer a few remarks which will, I think, effectually remove that impression? There are at present four pumps upon this system working continually in this country. The first, at Cricklewood, has already been nearly four years in operation, and not a single repair has been requisite during that period; with this pump two men raise 40 gallons of water per minute with the greatest ease. The second pump is at Wheal Concord, Devonshire, where commenced working March 21, 1861, in the presence of more than fifty engineers and mining captains, as will be seen by reference to the local papers, or to the *Mining Journal* of the following Saturday. Although the diameter of the tube of this pump is but 4½ in., it was found that 300 gallons of water per minute could be raised from the depth of 78 yards. The motive power was a water-wheel of about 15 or 16-horse power, but afterwards, owing to the supply of water decreasing, this wheel was replaced by a portable steam-engine of 24-horse power, and with this machine the pump raised from 250 to 300 gallons of water per minute from the bottom of the shaft—a depth of 115 yards. At the time my correspondent commenced to drop the pump the depth of the water was 90 yards, and there were four levels which also had to be drained, these levels in turn communicating with two other shafts; yet such is the power of the pump that in five days this quantity of water could be drained with the application of 24-horse power. With a pump upon my system, with a tube of only 5 in. in diameter, a greater quantity of water can be raised than by an ordinary pump with a tube 15 in. in diameter; comparing my main-pump with the drawing or plunger-pump, the same motive-power is found to give double the water when applied to the chain-pump. This will be readily conceived if we reflect that the simple ascent of the chain produces a continuous current of water, and that during each minute the chain-pump is effective for 60 seconds, whilst with the ordinary pump 30 seconds in every minute are lost for the return stroke, during which no water is raised.

Two other chain pumps upon my principle are at work in Birkenhead docks—one being employed for the draining of the dock itself, and the other as a marine pump—and give every satisfaction. The result of the working of each of the four pumps shows that 90 per cent. of the motive-power applied is utilised; a percentage which cannot be shown by any other pump. Before the pump was sent from Birkenhead to Wheal Concord it was tried for five days with the greatest success, and in the presence of more than 200 of the most influential gentlemen of Liverpool and Birkenhead, including a Member of Parliament, engineers, contractors, and others. It was admitted that the pump left nothing to be desired, whether considered for simplicity, lightness, or for the extremely small space which it occupies. Notwithstanding these advantages, the price is less than half that of ordinary pumps, and the chain-pump can easily be applied for drawing from any depth, and in any quantity up to 1000 gallons

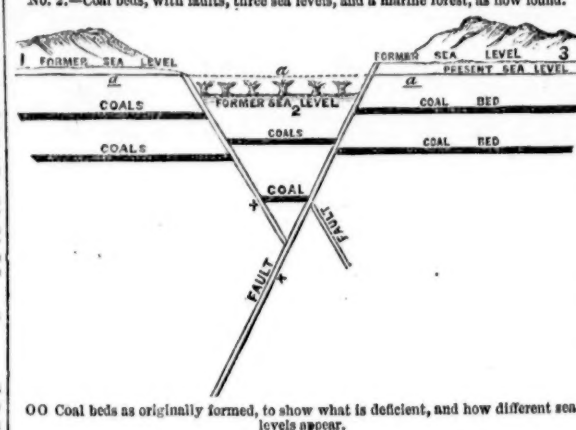
per minute. The principal thing to observe is to employ first quality iron for the chain; when this point is attended to the pulley over which it passes can be worked at any speed from 10 to 100 revolutions per minute, the great advantage of the pump being that the quantity of water raised increases exactly with the speed, though the difference in wear and tear is inappreciable. I only hope that at the forthcoming International Exhibition the numerous advantages which my pump offers will be judged of and appreciated according to its intrinsic merits, and am convinced that it will then be applied not only for mining and drainage purposes generally, but also as a marine pump. J. U. BASTIER.

19, Manchester-buildings, Westminster.

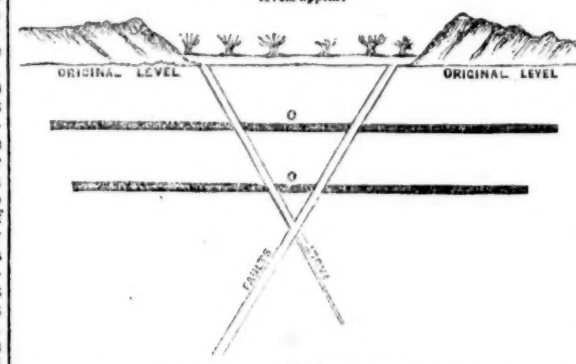
THE GEOLOGICAL FORMATION OF THE EARTH—No. XVII.

Sir,—In the Journal of Feb. 1 are sections illustrating the coal beds in Durham—one being a copy of that taken by Prof. Ansted, the other representing the beds in their supposed original positions; and to explain satisfactorily how the hills that are found above got up from below without injuring the beds or the coals must certainly be a puzzle to adherents of the Plutonic theory. In this week's Journal are sections representing different sea levels, and parties conversant with the illustrations of last week will easily understand that the different sea levels occurred under precisely similar circumstances. Referring to the section, the part lettered O O represents two coal beds; X X two lodges or faults; 1, 2, and 3 former sea levels; A A the present sea level. Piece No. 1 is passed up 10 ft.; No. 2 is sunk 10 ft.; No. 3 raised 15 ft. The coals are moved correspondingly with the sea levels, and in accordance with the professor's section of last week. In fact, sections from Nature, correctly laid down, will be found the same, whoever may have taken them. I shall enter more into details when my sections are all published. N. ENKOR.

No. 2.—Coal beds, with faults, three sea levels, and a marine forest, as now found.



O O Coal beds as originally formed, to show what is deficient, and how different sea levels appear.



NEW VIEWS ON THE CAUSES OF THROWS, SHIFTS, AND OTHER IMPORTANT PHENOMENA OF METALLIFEROUS VEINS IN THE NORTH OF ENGLAND.

Sir,—Having been enabled, after a lengthened course of practical experience and research among the metalliferous vein phenomena in the North of England, to arrive at certain conclusions which lead me to entertain some new and peculiar views regarding the causes of throws, shifts, bent forms of strata, &c., in connection with veins, I, therefore, beg that you will kindly allow me to bring before your readers a few of their most general characteristics. These views are based on the assumption that the fissures in the granitic nuclei, and the fissure-like built structures in the superincumbent systems of stratified deposits, have been the principal channels whereby the internal heat has been transmitted through the solid crust into the ocean, and that the heat so transmitted has occasioned numerous complex marine currents, which, by acting on the sediments on the bed of the ocean during the contemporaneous building of the veins and strata, have, with few exceptions, produced the throws, shifts, bent forms of strata, &c., in connection with veins.

That a general pervading high temperature has prevailed in past epochs, and that there is ample evidence of its increasing intensity as we look back into the earth's physical history, geologists in general will, I think, admit. The great pervading heat in the earth's early stages of development, and its diminution through subsequent periods to the present time, imply that the quantitative proportions of the gases, fluids, and solids constituting the earth's mass, have been successively varying, and that the two former have existed to very much larger ratios in by-past eras than at present. By taking a retrospect of that era when the general granitic peaks and ridges were being formed, I can conceive of a vast voluminous mass of ponderable matter, exterior to and enveloping the solid crust, and in a state of mobility, probably not so constituted as yet to form a distinct ocean of water and an atmosphere, but of a mixed arial and aqueous character. The granites, which are the nuclei of the dry land parts of the earth's crust, and which appear in the form of ridges, cones, &c., along the axes of mountain chains, were, doubtless, in a state of molten activity for a very considerable period. There is much probability that such ridges, cones, &c., were incased from their base upwards, and that they had attained a high degree of stability in their elevatory forms when denudation commenced at their summits and deposits began to be laid on their sides. During the incrustation of the granites into the above forms the upper exposed areas comprised within the several solidifying crusts would be large at first, but would afterwards diminish in advancing upwards, till they would ultimately arrive at a point where the converging solidifying crusts would meet and complete perfect envelopes. In those periods of granitic incrustation these areas would contain matter in a high state of activity, probably molten matter in a condition of ebullition; consequently, the continuous superincumbent materials of a mixed arial and aqueous character would be caused to rise with considerable velocity, and, therefore, occasion a rushing in from the sides to supply the deficiency. This rushing in of the cold surrounding medium undoubtedly accelerated the solidification of the granitic shells. It is in the deep and primary strata where a true fissuring might naturally be expected to occur, and at no crisis was it more likely to occur than when the general granitic ridges, cones, &c., had completed their solid coverings, because the crusts were then thin and the internal expansive forces energetic. While the granites were being developed into the forms already described, that vast voluminous matter, of a mixed arial and aqueous character, had been regularly undergoing condensation, and at the close of the period had assumed the form of a distinct ocean of water and an atmosphere. Although the granitic ridges, cones, &c., might not be simultaneous in their formation and completion, yet, at the same time, when the general granitic ridges were being formed, the oceanic water had attained its maximum quantity on the surface of the globe, and was standing with majestic grandeur around some of the highest peaks, while other peaks and ridges were still submerged. From this era forward, through cycles of untold ages, the granitic nuclei would be giving off their heat into the ocean, principally through the fissures and fissure-like structures built up into later formations, and also by frequent outpourings of molten matter. The ocean, in the immense interval of time during its decrease from its maximum to its present magnitude, by its retirement and fluctuations, would be ceaseless in its work of denudation and in the preparation of materials for alternating deposits on its bed; thus keeping up a continued work of raising and building—the former principally executed on the changing shore lines, and the latter at the bottom of the ocean.

It may be observed, respecting the *modus operandi* of the strata into their elevated positions and dislocated states, that there is a marked difference between the views now generally held and those about to be advocated. In accordance with the former, the sedimentary strata have been laid down in horizontal positions on the bottom of the ocean, and afterwards broken up from their aggregated solid state into dislocated masses, and heaved into their elevated positions by a powerful expansive internal force—and during such upheavals the land has made many oscillations. In agreement with the latter, the sedimentary strata were fashioned into the dislocated and contorted forms, on the sloping, stationary, submerged flanks of the granitic nuclei, by numerous complex marine currents, and then left, by a receding ocean, to become dry land; and that the ocean has made numerous periodic risings and fallings during its diminution from its maximum to its present volume.

By adopting the latter views, and allowing for variation of altitude of granitic eminences, it is quite reasonable to suppose that the peaks of the Granitians were standing above the face of the waters when the Cumbrian group was probably submerged, and receiving deposits of sediments against its summits. Thus has each elevation had its peculiar condition, each its horizon of stratified rock, and each its horizon of terrestrial and marine Flora and Fauna. On the areas of these elevations, in zones of varying altitudes, organic beings in most varied forms have found suitable conditions of sustenance, through immeasurable periods of past time, as is testified by the entombed remains in the stratified rocks which flank the primary strata. As organic beings at the present day are restricted to their respective provinces with regard to altitude in the atmosphere and depth in the ocean, so it was in times long gone by. The ocean, that great regulator and modifier of the provinces of life, by its retirement from the protuberant parts of the earth's crust, must necessarily have changed the altitudinal range of these provinces. However, it is neither the successions of life nor the changing horizons of life, but the present special subject of enquiry, but the causes of the throws, shifts, &c., of veins, as explicable by marine currents acting on the depositing

sediments in the bed of the ocean during the contemporaneous building of the veins and strata.—*Bolton, Eastgate.* JOHN CURRY.

(To be continued in next week's *Mining Journal*.)

CAST-STEEL FOR BORERS.

Sir,—Having had much to do during the last three years with Cornish mines, and many opportunities for observing what takes place amongst them, I venture to address a few lines to you for insertion in the *Journal*, not for the sake of bringing my name into public notice, but with a desire that my remarks may be instrumental to some extent in reducing the labour cost and wear and tear of plant in the mine.

The quality of cast-steel for borers is a matter of great importance to all mining proprietors, especially to those whose workings are carried on in very hard ground. This may be judged of by the fact that there is, according to my calculations, derived from information from the best quarters, about 300 tons of cast-steel used in Cornwall yearly for borers, worth on an average 45s. per ton, or in all about 14,000l. worth. The present method of sharpening and tempering borers in Cornwall is, I venture to say, a very bad one. I fully expect many persons will doubt this statement, and even very much question my knowledge perhaps, but to those who are likely to pre-empt the matter I would ask a quiet perusal of these lines, and also, if possible, a fair trial of the method hereafter alluded to. The blunt borers are sharpened and tempered at one heat by the Cornish smiths (I speak generally, there are a few, but very few exceptions); this I must denounce as a very bad plan. In the first place the borer must be made "white hot," in order to get through the work in a given time—that is, they must sharpen the borer before it gets too cold to harden, when dipped in the water, or it would again require being heated, so as to be tempered. This heating to a white heat is the greatest evil connected with it, because it seriously injures cast-steel of the proper quality, as when it is put to work it generally keeps breaking at the point, or as the miners call it "cribbing." Secondly, when the borer is heated about 2 to 3 inches in length is red, or white hot, and as soon as it is sharpened it is plunged into the trough, and there remains till cold. As a consequence, the length of steel is intensely hard, and often whilst in work a piece 2 in. long breaks off in the hole, causing a great loss to the miner, he having in most cases to bore a fresh hole. In several mines they have a little pool of water about 1 in. deep, and when the borers are sharpened the smith places the end of the borer in the water, and lets it stand perpendicular till cold, and thereby only has 1 1/2 in. of the end hard; this is an improvement, but still I think the method advised below is very much better, for reasons which will be given.

To meet these difficulties, and I may truthfully say these blunders of the smiths, the steel manufacturers have to supply a softer description of steel, in order that it may stand the great heat it is subjected to without serious injury; and here is a loss to the mining proprietor, because the heads of the borers wear away fast under the heavy blow of the slider mallet. And not only so, but the borer will not do the amount of duty, not being sufficiently hard at the cutting edge, which entails more work upon the smiths, they having an increased number of borers to sharpen, and an extra cost upon the miners, as they pay so much per "sharp" for all their borers. Some captains will, and do say, we pay our smith so much per quarter to do all the work required for the mine; therefore, the cost of a few extra sharpenings does not injure us, but if anything benefits us, as we charge the miner for all he has sharpened. This is not correct, for what affects the miners affects the proprietors. If a set of miners who are driving a level are charged—say for sake of reasoning—4l. per month for smith's work, or as Cornishmen term it "smith's cost," it is evident they must do enough work to pay the 4l., and since their wages after so doing, but if their smith's cost was only 2l., it is obvious the amount paid per fathom could be reduced, and the miners notwithstanding get the same amount of wages. Again, a lesser number of smiths would do the work, and thus effect a further saving.

As an epitome of my remarks, I would say the steel used for borers in Cornish mines is not the best quality for the purpose, because the manner in which it is at present treated by the smiths prevents the proper quality being used. I have heard many captains of mines say "The steel we get now is not half so good as what it used to be when cast-steel was first introduced for borers," and this is true, but it is not the fault of the steel manufacturers. When cast-steel was used much care was taken of it, and it was properly treated; but when the novelty was gone, the smiths got back to the old method of sharpening and tempering, and treated it as they did the borers of iron and steel points, and this necessitated an alteration in the quality. I would strongly recommend managers and captains of mines to adopt the following method of tempering borers:—

- 1.—Strictly prevent the steel being heated beyond a red heat.
- 2.—When the borer is properly hammered and sharpened let it be thrown on the ground, which in smiths' shops is generally ashes, until cold, or nearly so.
- 3.—When a convenient number of borers are sharpened, the smith to pick them up, and place the extreme points of the borers in the fire, and when the points are what is called "blood hot," or "cherry red," plunge them in the trough; and they are then fit for use for any description of rock.

It will be seen in this method two heats are requisite, and the advantage are—first, it makes the smith take more time, and he, consequently, does it better; secondly, in heating the borers the second time, in order to temper or "season" them, the extremity only is hardened, and all the steel behind it is tough, which effectually prevents its breaking. I must again insist, as of the greatest consequence, that the steel is not heated beyond a red heat. I know this will be a point of great difficulty, and one in which all the endurance and determination of the manager will be fully tried. In fact, the smiths themselves have told me, when talking to them about over heating steel, that steel which would not stand a good heat (which in their idea is a white heat) was no use to them. And when I desired them to try the plan just proposed, they said "If we did it as you say we should have to work all night to get our work done." Even admitting that it would take all that night to properly sharpen the borers, on the morrow they would find probably not one-half the quantity to be sharpened, and then a different quality of steel could be introduced, much more suitable for the purpose. But, generally speaking, my words have taken about as much effect "as water on a duck's back," they do not see it, and on they go in their own way, and if steel will not stand the ill usage it is subjected to it is at once condemned. One great reason of their so doing is that when you stamp them to hammer on the borer at a red heat it gives them a little more "shoulder work," as the steel is not nearly so plastic as it would be at a white heat. As I have before said, to enforce this the manager must be prepared to encounter much opposition and stubborn self-will, but I should think it would after a short trial prove the method to be so superior that further supervision would be unnecessary.

It may be some persons will much doubt these statements, and my object in making them; to such I would say, give the plan a trial. As a shareholder in several mines, and as agent for a firm who through my agency supply upwards of 200 mines with steel, I have the welfare of the mines at heart. I do not claim the method as mine, I simply advocate its adoption. And should the remarks prove the means—even to a limited extent—of reducing the cost of exploring hard-ground mines, I shall feel myself amply rewarded.—*Clifton, Bristol.* HENRY K. JORDAN.

GOLD—(Continued).

ORIGINAL MEANING OF TROY WEIGHT, ETC.

"I will make a man more precious than fine gold, even a man, than the golden wedge of Ophir."

Sir,—Here is proof positive there hath been a very superior nugget of gold exhibited ages ago; but whether Isaiah intended to class some forth-coming mortal as of more intrinsic value than the above particularised auriferous pebble of a conical shape, or that the translated term *wedge* is merely a paraphrastic expression to denote a well-known mass of rich metal, are questions that can only be truly decided by referring to an original text. There will be seen certain characters absolutely signifying *V-edge*, because it was a tapering lump, and yet ignorant scribes write such things as show a *> edge* (wedge), thereby completely annulling its primitive and true sense; whereas, had mankind never confounded the simple divine figures designed by gods with the complex characters designed by worldly men, human wisdom would not have retrograded to its present *imagine-airs* superiority, where the generality of mankind daily discard almost every fact pertaining to natural possibilities to accept plausible theories, to be refuted in their turn, thereby preventing truth and perfection again predominating. Such will always be the case till people have sense enough to define the real difference 'twixt inspired effusions and ideal emanations; for, while narrow minds prefer to ridicule conspicuous assertions rather than attempt to scientifically disprove or confirm them, this world must remain in hopeless ignorance of past and future revelations. For, even were a living soul to be endowed with the divine knowledge to show the exact spot the prophetic Vedge of metal was extracted from, that mortal would no more be believed by worldly folks than if he or she declared the said golden solid weights just as many ounces as must pass years since it was first removed from its native womb to the day it will be again re-discovered where last buried through the intervention of the same over-ruling power that caused certain wicked cities to be prostrated—a fate similar evil places may be doomed to in their turn. In the meanwhile, as some folks might wish to know the exact spots where the said divine nugget was procured and last deposited, they had better work it out themselves by assuming for absolute data, the latitude of both places the same, 'twixt which draw a base line, representing in figures exactly one-third of this globe's circumference; then, at the extreme ends, erect parallel perpendiculars, each equal to half the base. Thus, after three sides of any parallelogram is given, to find the other only requires a little science. To assist those who have faith in the problem, the base or distance must only be computed in figures representing geographical miles; then one-half these figures will show the number of solar years intervening, consequently, the other half, which is equal to one-sixth of the earth's circumference, will indicate the true *weight* of the royal metal in Troy Ounces, which differs from any modern scale in many respects. In the first place, the T was intended to represent to the eye equal libration, as well as *lib* or *lbe*, from *lib*, signifying unequal, and *tye* equality, and not to mean royal, which *lib* meant, or *re-lib*, gave rise to the common expression "right to a T," even the present Welsh say *troi*, to indicate the preponderancy of one scale over the other, and yet they write the letters *r.w.t.a.* to express *pois*, or pound. Besides, what the British now describe weight was primarily noted *teel*, or *teet*, to signify a wet T, or small weight, but from pronouncing the sign "wet," subsequent ignorant scribes translated it to imply wheat, or a grain of corn—hence 24 grains=1 pennyweight, 20 pennyweights=1 ounce, and 12 ounces one pound. Thus in a few lines are so many errors that it is the most convincing proof those authors who last translated Holy Writ into English were not in the least imbued with Divine inspiration; else why did they displace the primitive T for the Greek H in such a natural as *see-ee* to the senseless term wheat? For when the gods formed the land-gauges of this earth, their Divine characters denoted the principle *a-rain* was *cal* was *re-cal*, thereby conveying to the simplest mind the proper sense of the word for earthly mortals to live upon; not only in the modern English word wheat, but in most of the ancient names, as *Noh*, *Schem*, *Ham*, *Japhet*, *Christ*, &c., have since they were first penned had the *hell*—is it put into them to confound mankind. The word pennyweight is not much out of the way, as original works style it *pe-ni-weit*, from *pen* being the weight of certain silver coin denominated *penes*—hence originated the term *recompence*, or *re-compence*; that is, to re-compence to those entitled to it. *Peni-tence* meant to satisfy certain illegal acts by paying *pen*; *penry*, lack of *pen*ce (penury); *penence*, thinking about *pen*ce; *es-pence* (expense), estimate of *pen*ce, &c. Then, again, although modern folks daily use the first and last letters in *Oun* as *oz*, yet the same folks will write such a sensible term *ounce* and *Troi* *see-its*, Troy weights, thereby abandoning simple expressive terms for some arbitrary vernacular idiom of ideal construction. G. F. GORLE.

MINING SUCCESS—COMPETENT AGENCY.

Sir,—I find by the report issued by the directors of the Scottish Australian Mining Company that they have now opened one of the most extraordinary copper lodes that has ever been discovered, being 70 ft. wide. In describing this mass of ore, I find that Capt. Dalley's name is mentioned by the superintendent as having repeatedly called his attention to this now remarkable place. I believe that Capt. Dalley was not the real discoverer; but, having seen the ore in the possession of a gentleman in Sydney, who would not tell him where it was obtained, but informed him that it was impossible that he could find it out, and also said that if he had been placed on the spot he could find it out; not knowing to a few hundred miles the exact place where he had to direct his search, by dint of sheer perseverance, however, he succeeded in finding the riches, by discovering a place on the back great iron range, on which a great fire had

been made, in order to conceal the marks of the discovery. Capt. Dalley opened this place, and found the rich lode mentioned in the report of the directors alluded to. It will be very singular if this should prove the greatest copper ore ever discovered, as Capt. Dalley would then have the honour of being the man who brought to the notice of his employers first the greatest lode of silver ore ever discovered at the time in Mexico—the Gallego Mine, at Zacatecas, where the company, under his superintendence, was fortunate enough to find, in 1828, such a mass of silver ore as to give a million sterling profit; this fact is known to Messrs. John Taylor and Sons, Queen-street, London. Capt. Dalley was afterwards, in 1830, employed by the present St. John del Rey Company; in that year he reported on the Morro Velho property, stating his belief that Morro Velho would be a rich mine when all the other rich mines then at work would cease to be so, in other words, all of them would have been worked out and exhausted. Documents to this effect are recorded in the St. John del Rey office by Mr. John Diston Powrie, one of the directors, who is personally acquainted with all the facts as it was, by Capt. Dalley's recommendation, in 1834, the St. John del Rey Company purchased this property. There are but few public servants who have had the good fortune to direct their employers so successfully:—the richest silver mine in the world, for the time, in Zacatecas (Gallego);—the richest gold mine (Morro Velho), St. John del Rey Company;—and now the richest copper mine in the world, the Scottish Australian Mining Company, New South Wales.—London.

EAST CARN BREA.

Sir,—I ask permission to confirm a statement I made in a letter to you on a former occasion, that agents of mines were more competent to give an opinion as to the price of ground, value of lodes, &c., in their own particular concern than a stranger, however competent, hurrying through hundreds of fathoms of ground, for the first time, in an hour or two. On a recent occasion, one agent valued the lode in the 26 east, at East Carn Brea, as worth 61. per fm. another 201. per fm., while the agent valued it at 301. per fm. At that time the controversy was waxing warm, and the captain determined to take down the 10 feet of the lode at that time deemed and to be seen, to set it apart, and ascertain its exact commercial value. The result was—8 tons, worth 71. per ton, or a money value of 567. for the 10 feet, or about 56. per fm. Thus, one agent values at 61., another at 201., the agent at 301., while the actual value is 56. The value of 56. per fathom, has now been well vindicated, and shareholders will now only have themselves to blame if they are frightened out of shares like Cook's Kitchen, South Caradon, East Caradon, Marke Valley, East Carn Brea, &c., by sinister reports. It is gratifying to note the gradual improvement taking place in East Carn Brea.

To use the words of Capt. Jewell, one of Messrs. John Taylor and Sons' agents, who last week inspected the mine, "The lode in the 50 west is 3 ft. wide; a beautiful lode, yielding 4 tons of ore per fathom, worth from 71. to 81. per ton; driving by six men, at 41. per fathom." "According to the agent's report on Thursday, the lode in the 40 fm. level east is worth 4 tons per fathom; the 26 east 3 tons per fathom; the 30 west 3 tons per fathom; the 50 west 4 tons per fathom. The winze below the 40 is worth 4 tons per fathom. The 26 west of the 40 is worth 2 tons per fm." There are few mines in Cornwall that can show such productive ends. The attention of the shareholders may be directed to the fact that the shaft will be down to the 60 in about another month, when a rise may be looked for in the price of shares. East Carn Brea may now be safely pronounced in a position to take care of itself. Sales of ore, dividends, and discoveries already made will beat all mere assertions, and outlive market fluctuations.

5, Copper-court, Cornhill.

GEORGE RATTEN.

WEST KAME MINE.

Sir,—Having heard a great deal of this property, I have taken a stroll over it, for the purpose of ascertaining the realities of the pretensions set forth in the prospectus. I saw the lode, as described, and broke copper ore at the surface, which yielded 4½ to 5 per cent. copper as broken. From this place scores of tons of ore may be broken without sinking. I found the 35 tons of dressed ore weighed off, as well as the ore broken at the surface, which may be dressed as to ship off 50 tons forthwith. The building is complete, as described. The new engine-shaft is sunk and complete to 6 fathoms, well timbered, and secured; in doing this work a part of the rock was met with on the north, or lode side, of the shaft, containing spots of copper ore, but as this shaft is not expected to take the lode to less than 30 fms. from surface, a level is to be driven about 12 fms. as soon as 10 fms. are reached. It appears quite evident to me that an engine for working and crushing is all that is required to make this a dividend property in 12 months, and, accordingly, I have become a subscriber for a considerable number of shares.

X. Y. Z.

NORTH WREY MINE.

Sir,—In explanation of the notice which appeared in last week's Journal, I beg to say that the old working shaft of this mine is in a narrow valley between two hills, sunk 41 fathoms on the dip of a north and south lode, the last three being part of a bargain to put the shaft 50 fms. from surface. A 38 fathom level has been extended north about 33 fathoms under the rising ground on the course of the lode, and is yielding very good silver-lead ore, certified by assay to contain 71 per cent. of lead, and 31 ozs. of silver to the ton of ore. Previous to the formation of the present company and the resumption of the workings, the mine had for some three years been standing full of water; the decay of the timber consequent thereon, coupled with the drainage from the still older workings to the south in Blicton Wood (the component parts of the lode being chiefly chert and white granite), the old shaft was very difficult to keep about, short lengths of stout timber snapping almost without notice, so that the workings in the bottom were attended with great danger. At the best, although proving its value as it goes down, a shaft sunk on the angle of a fast-dipping lode is very inconvenient, requiring a great outlay for timber, besides being an expensive one to work in the wear and tear of gearing. In consequence of this, the company acting under good advice, wisely determined to sink a new shaft perpendicular in the country, about 23 fathoms to the east of the old one, to intersect the same lode on its dip, about 50 fathoms from surface. This shaft was commenced on March 21, 1861, and in your last Journal you did us the credit to notice the fact of its being holed on the 3d inst. Considering all things, the recent bad weather, and the very fluctuating character of our motive-power (water), I think I may take some credit to myself and the company for dispatch in carrying this work out. We have, in a splendid position, sunk a good shaft, 10 ft. by 6 ft., cased and divided it, and put in footway, leaving only a few more fathoms to square down to be an equal depth of our 38 fm. level, from the commencement of this shaft, until it will be completed to the 38, will be about 11 months, at a total cost of 3000. We put the first 23 fathoms down in 19 weeks, at a cost of 1631., and had the hindrances I have referred to (drought and frost), not intervened, we should have not it through in 8 months. At about 24 fathoms from surface we came upon an east and west lode crossing the shaft, about 18 in. wide; we had the same lode again in the cross-cut from the 38, and here, I am happy to say, it was fully 3 feet wide, composed of a beautiful gossan, with spots of malleable copper and grey ore, white granite, iron, and strong muddle. This lode runs 30° south of east and north of west, and if you take the trouble to compare that run with the position of the mine (see maps herewith), you will not only see that the copper lode is traversing in a line with our rich neighbours—the Caradons—but that the surface plan of the sett will evidence, by the lodes already proved, that we have no less than three crossings, or junctions of these lodes, closely around the shaft, and I am satisfied each important junction cannot be over-estimated. I should be very happy to show any practical man over this mine, to judge for himself, for the more it is known the better the estimation it will attain. Perhaps I ought to add that we have a 40-ft. water-wheel in fine condition, and a 24-in. horizontal engine, made by Messrs. Nicholls and Co., on the mine; the latter about to be erected at once. So the shareholders may really begin to feel satisfied the ground will now have an energetic trial, and if they will take my advice they will not allow any new blood to come in at a low price to reap the benefit of their persevering outlay.—Callington, Feb. 12.

THOMAS KEMP.

OXYGEN A PREVENTATIVE FOR EXPLOSIONS OF FIRE-DAMP.

Sir,—I find that muriatic acid gas stifles the workmen in coal mines, and does not properly combine with the fire-damp in a gas as it did in a liquid. The affluents want arousing. To accomplish this object, send a jet of steam with the jet of oxygen gas through the mine, and let the oxygen gas be as pure as possible—say, by heating super-oxide of manganese or any other oxide.—Proof: the water which comes from coal mines is extraordinarily deficient in oxygen, plain showing that the fire-damp is willing to absorb more oxygen if there were any more (free) in the water.

Little Bolton, Feb. 12.

JOSEPH JONES.

MINERS' HAVENS OF REFUGE; OR, ANOTHER SAFETY-VALVE FOR MINERS.

Sir,—Colliery proprietors are doubtless now contemplating the desirability of universally having two shafts to each pit, also a communication or staple, between different seams of coal, the wanting of which caused the fatality during the late casualty. Besides the foregoing, there is another safety-valve that might save the lives of miners if the brattice should be destroyed by fire or otherwise, and as it is not yet, to my knowledge, been noticed before, permit me to describe my idea. The bisection of a shaft by a brattice generally produces sufficient ventilation in the whole of a colliery to enable miners to do their work in any part, but so soon as a brattice is destroyed the upward current of gas and downward passage of air ceases, and what may have disturbed the brattice has probably interfered with the arrangements made for miners leaving the pit. Inexpensive relief would be conferred to the minds of all engaged in underground workings to be aware that in such fearful emergencies they could all resort for safety, and wait for relief, to some particular and selected part in each seam set aside for that purpose, and which could be easily ventilated, perfectly distinct and independent of the mode adopted for the remainder of the colliery—the same as is done daily in ventilating particular rooms in buildings. The cost of these "havens of refuge to miners" would be inconsiderable, as by embedding under the brick or wooden casings of shafts a diaphragm, or concentric pipe, laid from the outer air to the selected spots in each seam, it would be accomplished (a mere extension of the brattice principle). At each place appointed for the miners to congregate it may be desirable to have the power to close the pipes where the miners in other seams have not been working.

24, Abchurch-lane, E.C., Feb. 10.

G. WALKOTT, C.E.

WHEEL GUSKUS—JEFFREY F. WOODLAND.—This case was set down for trial yesterday in the Court of Common Pleas, Guildhall, before Mr. Justice Byles. It was an action by Mr. Alfred Jeffre, late of Cannon House, Queen-street, to recover of the defendant, a shareholder in this mine, 581. 10s., balance of an account alleged to be due to him (plaintiff) for services as secretary of the Wheel Guskus Company. Mr. Huddleton, Q.C., was specially retained as counsel for the defendant. Mr. Marshall, Deputy Registrar of the Stannary Court; Mr. Berry, the solicitor of the company; and other witnesses, were in attendance with a mass of evidence to rebut the plaintiff's claim; but at the last moment he withdrew the record (as it is called), and the case, therefore, was not tried, and the costs fall on the plaintiff. We are informed that a special meeting of the Wheel Guskus Company will shortly be convened for the purpose of adopting measures to protect the shareholders against a repetition of such proceedings.

Perfect freedom from coughs in ten minutes is secured by Dr. Locock's PULMONIC WAFERS. They give instant relief, and a rapid cure of asthma, consumption, coughs, and all disorders of the breath and lungs. Have a pleasant taste. Price 1s. 2s., 3s., and 11s. per box. Sold by all medicine vendors.

HOLLOWAY'S OINTMENT AND PILLS—UNIVERSAL PATRONAGE.—Let all sufferers from general or local disease take heart, and follow in the wake of thousands who ascribe their restoration to health to the use of these noble remedies. Rheumatism in the muscles or joints, gouty pains, neuralgic tortures, cramps and spasmodic twitches depart under the appropriate employment of Holloway's ointment and pills. Bad legs, all kinds of ulcers, sores, burns, pimples, cutaneous inflammations, and dropsical swellings are best met and quickest conquered by this ointment, which happily combines harmlessness with efficiency. The reputation Holloway's ointment and pills have acquired throughout the habitable globe should induce every afflicted person to give them a trial before despairing of relief or abandoning hope.

Meetings of Mining Companies.

DRAKE WALLS MINING COMPANY.

An ordinary general meeting of proprietors was held at the company's offices, Winchester-street, on Tuesday.—Mr. DUNFORD in the chair.

The notice convening the meeting having been read, the minutes of the last were read and confirmed. The accounts for the three months ending Dec. showed—

Balance last audit	£1218 4 2
Tin ore sold, Oct., Nov., and Dec.	4289 7 10
Arsenic sold	137 10 10
Account overcharged by Duchy of Cornwall	1 1 0 = £5676 3 10
Mine cost, dues, &c., Oct., Nov., and Dec.	£3874 10 8
Extra disbursements	70 3 11 = 3944 14 7
Leaving credit balance	£1731 9 3

The balance of assets over liabilities (including the value of stores on hand) was £1311. 14. 7d. The report of the agents was read, as follows:—

Feb. 8.—Matthew's Shaft: The 102 fm. level, east of shaft, has been extended 3 fms. 1 ft. 6 in., the ground being hard for driving, present price, 147. per fm., the branches being 2 ft. wide, producing tin and copper to the value of 61. per fathom. At the present time the end shows a better appearance; this we have been expecting for some time past. There are four stopes working in back of this level, by 20 men, in the ground, worth 77. per fm. In the 92, east of Matthew's shaft, the branches in the end are unproductive, and we intend to place the men to cross-cut north and south, with a view of making some discovery. In the level, east of Matthew's shaft, the branches in the end continue worth 81. per fm. We are laying open much more tin ground than we shall stop away for some long time at and above the 40. There are 15 men stopping in this level, in tin ground worth 81. per fm. We have eight men stopping below the 92, west of Matthew's shaft, in tin ground worth 51. per fathom.—Bettley's Shaft: The branches in the 102, west of this level, are producing stores of tin and copper, but not to value. Some 3 or 4 fms. west of present end we have a cross-course, which will cause more favourable change in the branches. In the 80, west of Bettley's shaft, the branches in the end have been worth 101. per fm. In the present end, however, they are cut off by a cross-course, and we are now driving south to intersect the same, and we think by driving a few feet further the main branch will be reached. We have eight men stopping in back of this level, in tin ground worth 81. per fm. In the 70, west of Bettley's shaft, the branches in the end are worth 57. per fm. We have taken the men from this end, and put them to assist in putting in new stulls in the 40, west of Bettley's shaft, in order to set more stopes. In the 60 fathom level, west of Bettley's shaft, the branches have been discovered with a hard cap, which we have passed through, and find more favourable ground to the west of it; these branches have lately improved, and are worth 91. per fm., with a promising appearance. This is the most western end in the mine, and the prospects have of late much improved. There are eight men stopping below this level, in tin ground worth 91. per fm. In the 50, west of Bettley's shaft, the branches continue worth 101. per fm.; this end is also going into new ground. We have eight men stopping below this level, in tin ground worth 81. per fathom. The 40, west of Bettley's shaft, has been extended west and south 4 fms. 1 ft. 6 in., in tin ground worth 91. per fathom, and very promising. We have three stopes working in back of the 40, by 20 men, in tin ground worth 101. per fm., and we are laying open more tin ground in tin ground to surface. We are also putting up a rise from No. 1 stop in back of the 40, to communicate with the workings above, and we expect to effect a communication there-with within a fortnight or three weeks, provided the ground continues favourable; the branches in the rise are worth 91. per fm. By putting in new stulls in the 40 fm. level, and communicating the rise with the 30, we shall be in a position to let more stopes. We are now breaking more tinstuff than we can take away, consequently it must accumulate on the stulls, until we reach the 30 fm. level, when it will be available to come away as required.—North Lode: The 70 fm. level, west, on middle lode, is unproductive, and we have put the men to cross-cut from No. 2 to No. 3 lode, which we calculate will be intersected by driving 5 fathoms further—ground favourable for progress. We are preparing stulls and other materials for making Bettley's a drawing shaft, and as soon as the surface water abates we shall commence to fix a double skip-road in this shaft. At the present time we can do but very little towards working in the shaft, but when the water subsides we shall be able to do more work for 11. than can now be done for 21. The late very wet weather and short days have prevented our dressing the full quantities of tinstuff brought to surface, and our whims have been occupied pretty much in sending down timber, &c., for the western mine, consequently our quantity of broken tinstuff is increasing underground. The price of tin having receded will effect our credits for the past quarter, a circumstance upon which we have no control. The western levels of the mine continue to open up satisfactorily, and we are laying open more tin ground than we are taking away, which is the best evidence of the state of the mine. Tinstuff drawn for the quarter ending Dec. 1861, 15,419 wagons and kibbles. There are 375 persons employed in and throughout the mine.—T. GREGORY, J. HOSKIN.

The CHAIRMAN, having moved the adoption of the report and accounts, stated that the results of the past three months' operations could not but be considered as satisfactory, for, in the face of an average drop of 51. per ton, there had been a profit upon the quarter of 583, in addition to which there evidently was a reserve of tinstuff on the stulls, which, in a mine like Drake Walls, was always a good sign; therefore, if the price of tin during the past quarter had been equal to the corresponding preceding period, there would have been realised a profit of about 8001.—so that the returns had increased.

Mr. WILLIAM BETTLEY had much pleasure in seconding the proposition for the adoption of the report and accounts.

Mr. BALSTER drew attention to an item in the accounts of 10 guineas, a charge made for an inspection of the mine.

The CHAIRMAN said the inspection referred to was made in accordance with a resolution passed at a committee meeting, in consequence of some difference of opinion having arisen as to the manner in which the mine should be worked. The views taken by Capt. Skewis were not endorsed by some members of the committee, but his recommendations having been modified a compromise was come to as to the best course to be pursued. He was upon the mine some short time since, and he did not see that any important suggestion had been made as to the working of the mine that had not been already recommended by the committee.

Mr. GOATLEY, in answer to a question, stated that during the past quarter there had been drawn 17,189 kibbles, against 15,418 during the preceding quarter.

The CHAIRMAN, in answer to a remark from Mr. Balster, said that the carrying out of the recommendations of Capt. Skewis would have incurred an expenditure of about 40001., which some of the members of the committee did not think at all necessary. He could not, however, see that any possible objection could be raised to an independent agent being called upon to inspect the mine, and to give his opinion as to the best course to be adopted in developing the property.

At the request of the CHAIRMAN, the minutes of the committee above referred to were read, to the effect that the local committee should meet on the mine to consider the clauses of the draft of the lease, and should have the power of calling in and obtaining the opinion of such agent as they might think proper, and that the result should be forwarded to the offices, and the expenses defrayed by the company.

Mr. GOATLEY, in answer to a question, stated that the lease was going on in a very satisfactory manner.

Mr. HARRIS enquired if the committee proposed to declare a dividend upon the present occasion, having a balance of nearly 20001. standing to the credit of the company's account.—The CHAIRMAN said, as far as he was himself concerned, he should certainly oppose the declaration of a dividend upon the present occasion; for a mine like Drake Walls was worked with the greatest benefit to the shareholders, with a good balance on the right side of the account. If a fair profit was made during the current quarter, they might be in a position at the next meeting to declare a small dividend.

Mr. WILLIAM BETTLEY said, as soon as the new skip-road was finished they would be able to increase their returns very considerably.

Mr. McALLAN was opposed to the declaration of a dividend, for he was strongly of opinion that a sound financial position was of far more importance to them than any dividend. Considering the state of the metal market, he was only glad to find that no call was required. He considered the mine was looking better than for some time past.

The report and accounts were then received and adopted, and the committee of management was re-elected.

The CHAIRMAN, on behalf of the committee, acknowledged the continued confidence of the shareholders. He thought that, all the circumstances considered, the mine during the past quarter had done much better than could have been anticipated. The company's financial position was becoming sound and satisfactory, and they were accumulating tinstuff on the stulls, which would soon be sold at, he believed, a better price.

A vote of thanks to the CHAIRMAN terminated the proceedings.

WHEEL TRELAUNY MINING COMPANY.

An ordinary general meeting of proprietors was held on the mine, on Saturday last, Mr. W. PAGE in the chair.

Mr. DUNFORD (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed.

The following statement of accounts for the three months ending Nov., showing a profit of 12651. 6s. 6d. (or 24s. per share), was submitted:—

Silver lead ore sold	£6271 3 3
Mine cost	£3243 7 8
Merchants' bills	1288 16 10
Royalty	306 0 9
Interest	39 2
Income tax	128 8 10
Incidental expenses	0 2 6 = 5005 16 9
Leaving credit balance	£1265 6 6

The assets exceeded the liabilities by 21061. 18s. 2d.

Mr. FRANCIS PRYOR (the manager) then read the following report:—

Feb. 8.—Smith's shaft is now completed to the 181; that is, cased down and divided, plat cut, and all other work, so as to enable us at once to commence a cross-cut to intersect the lode at this point. We need scarcely add the importance of seeing the lode with all speed in this level. The 172 is driven north 20 fathoms over lead ground for all this distance; the present end is presenting better appearances, and, in our opinion, will shortly be of more value. The 172 is extended south 20 fathoms; this lode has also produced lead for all the distance—present end worth 61. per fathom. The 162, south of Smith's, is extended 8 fathoms; lode worth full 121. per fathom. The 162, north of Chippendale's, is extended 5 fathoms; lode worth 61. per fathom. In the winze sinking below the 162, south of the shaft, the lode is worth 51. per fathom. In the 152, north of Chippendale's, the lode is producing good stores of ore, but not to value. The 152, south of Smith's, is extended 97 fathoms; lode worth full 101. per fathom. The lode in the rise in the back of this level is worth 51. per fathom. Chippendale's shaft is in all respects completed to the 162 fm. level. In the 152, north of Trelawny's, it has been our practice to drive in the country, in consequence of the hardness of the lode; we are now cutting into it, and are glad to say it is producing fine stores of lead. We have communicated the north with the south mine, and laid open some good ground. The 142, north of Trelawny's, is worth 201. per fathom; this end has been driven over a valuable piece of ground for 45 fathoms in length; we have about 17 fathoms more to communicate with the 162, at Smith's, which is also worth 121. per fathom. The rise in the back of the 142 is worth 51. per fathom. The pitches are much the same as for some time past. From this report you will observe we are losing no time in sinking our shafts, so as to open up ground as fast as possible, believing the only chance of success in this mine is to cut open the ground with all speed, having due regard to economy; as a proof of this, the number of persons we have employed in all is 365.—FRANCIS PRYOR, RICHARD PRYOR, THOMAS GREENFIELD.

The CHAIRMAN, in moving the adoption of the report and accounts, said that the report just read by his manager entered so fully into the various points connected with the property that little, if anything, remained for him to say upon the subject. It would

be seen that the mine was improving in depth, and that it was being worked with vigour and activity, which was the great secret of success in mining undertakings; profit during the past quarter amounted to 12651. 6s. 6d., which could not but be deemed an exceedingly satisfactory result.

Mr. E. COOKE, having seconded the adoption of the report and accounts, put several questions to the manager with regard to the future prospects of the mine, which were satisfactorily replied to.

Several further enquiries having been made by different shareholders as to the position and prospects of the mine, the report and accounts were unanimously adopted. The CHAIRMAN said it now became his agreeable duty to ask shareholders to adopt the profits realised during the quarter ending November. As they were aware, the profit realised during that period amounted to 12651., or 24s. per share. The company had fully considered the question of dividend, and, considering the position and prospects of the mine, were unanimous in recommending the declaration of a dividend of 10s. per share. By the adoption of that recommendation, 7801. would be absorbed, leaving a balance of 4851. or 4s. per share to be added to the profit and loss account, which then amount to 13201. He considered that a prudent course, and, judging from reports before them, he certainly saw no reason whatever to doubt that at the next meeting the committee would be in a position to declare a similar dividend, and, at the same time, still further increase the amount in reserve. They must all concur with him in a large mine like Trelawny requiring a good balance in hand to ensure an economical development. The committee were actuated with that view when they recommended the declaration of the present dividend, and, so long as he continued a member of the committee, he should strongly advocate a persistency in that course.

Mr. E. COOKE fully endorsed the remarks of the CHAIRMAN, although he had some gentlemen around him expressing the opinion that a dividend of 10s. per share would be a more prudent course. He had been induced to form that opinion from the annual report of Mr. Pryor's report, for, even supposing that the profit upon the current operations was not quite equal to that of the past three months—which, he saw no reason to apprehend—but if they only made a profit of 10001., the committee at the next meeting would be able to declare another dividend of 15s. per share, and add to the reserve.—A dividend of 10s. per share was then unanimously declared.

Mr. W. WEST reminded the meeting that Mr. Pryor, previous to his appointment as manager, was called in to inspect the mine, and had otherwise devoted considerable time and trouble to the property, for which he had not received any remuneration. Mr. West felt sure the meeting would cordially agree with the motion he was now proposing, which was that the sum of 251. be paid to Mr. Pryor in acknowledgment of services rendered previous to his appointment as manager.

The CHAIRMAN said Mr. Pryor was undoubtedly entitled to some remuneration for the trouble he had taken prior to his official connection with the company. He agreed with Mr. West as to the sum proposed, but at the same time he was strongly of opinion it ought to have been paid by the previous management. He concluded by seconding the proposition, which, being put, was carried unanimously.

Mr. F. PRYOR, in acknowledging the vote, thanked the proprietors for thus having recognised his services. He assured them that the Trelawny Mine would continue to be his best attention; and, aided by the present excellent agents, he looked forward with confidence to a long career of prosperity.

Votes of thanks to the CHAIRMAN, committee of management, and secretary having been accorded, the proceedings terminated.

KELLY BRAY MINING COMPANY.

A general meeting of shareholders was held at the company's offices, Austin-street, on Thursday, Mr. J. FIELD in the chair.

Mr. E. KING (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed.

A statement of accounts for the three months ending December was then submitted from which the following is condensed:—

Balance last audit	£107 4 1
Call received	486 0 6
Copper ore sold	783 3 8 = £1366 8 5
October, mine cost, merchants' bills, &c.	£429 17 1
November, ditto	419 4 2
December, ditto	425 15 6
Expenses and loss upon forged shares	24 3 1 = 1298 10 1
Leaving credit balance	£47 8 1

The report of the agent was read, as follows:—

Feb. 11.—We have one pitch working in back of the 125 west, by four men, at 11., and one ditto in back of the 95, by two men and one boy, at 13s. 4d. In 17. has been driven east of shaft about 47 fathoms, in which the lode is 7 feet wide, strong lode, producing from 3 to 4 tons of ore per fm., worth 41. per ton. The same level of the same level produce 3½ tons of ore per fm., worth 41. per ton; here the whole ground standing from 18 to 20 fms. in length, which will pay well to work lode continue as productive as in sight; but we expect an improvement here by stopping, as good bunches of ore were found to the west of the shaft, above the point of operation eastward. The 35 east has been driven in the past three months 3 fms. 3 ft. 11 in., and is now about 45 fms. east of shaft, in which the lode is 3 feet wide, and is very good, and it will now produce 2 tons of good ore per fm., and there is every reason to expect a further improvement, looking at the character of the ground in which the lode is embedded; the ground is whole to the west, and for a considerable length on the course of the lode; I have not seen the prospect of this mine looking so promising, going east from the western mine, for the last 13 months past.—Eastern Mine: The 70 has been driven east in the past three months 13 fms. 2 ft. 3 in., and is now east of cross-cut about 30 fms., in which the lode is 2½ feet wide, composed of quartz, capel, fluor-spar, muddle, and occasionally stones of very strong lode, much more so than was found in the upper levels; in the level which has been driven the lode will average in size from 2½ to 3 feet wide. The been driven east of cross-cut about 75 fms., and is suspended for a time, the shaft bad, and the men are put to sink the winze in bottom of the same level, in which lode is producing 2 tons of good ore per fm., a promising lode; the above-named level will ventilate both the 60 and 70, and also lay open some good tribute ground; have a pitch in the 60 east of the winze, and there is a good branch of ore discovered if this holds the men will do well, the ore being of a better quality than in the western mine, and fully shows that merely driving a single level into the mine is no proof of a mine; unless the ground is opened by rising and sinking, and can form an idea of future prospects. I would recommend the following alterations to be prosecuted most vigorously in the coming quarter—to drive the 70 four or six men, and to drive the 35 east, by two men and two boys, in the western mine. In the eastern mine, to sink Watson's engine-shaft below the 70, by nine men, to prove the large lode in the above level. To drive the 70 east, by four men, and the winze in bottom of the 60, by four men and two boys; by so doing, if the aspects hold good as at present, there will be a quantity of valuable ground laid open. To carry out these operations properly, I estimate the cost will be 4501. per month, the returns from 150 to 160 tons of ore bi-monthly. The last three months' returns were more than calculated on, owing partly to there being a large cargo of which was charged in December last, and is not done yet. We have employed 300 men, underground and at surface, about 90 persons. Every economy shall be consistent with the proper development of the mine.—S. JAMES.

The CHAIRMAN having moved the adoption of the report and accounts, Mr. THOMAS KING said he should strongly object to the sinking of the engine-shaft in the eastern mine until some discovery of importance had been made in the 60 and 70 levels, driving east. By pushing on those levels and sinking winzes some important result might be realised.

The CHAIRMAN said his views were quite in accordance with those of Mr. T. KING, considering that nothing of importance had yet been discovered either in the 40 or the 70 fm. levels, it would be premature to resume sinking the shaft to a depth of 100 fms. The 75 had passed through a very good run of ore ground, and the still productive. Over this point, in the 24, the end was coming into another ground. It appeared by the section that most of the bunches dipped west, and the large run of unexplored ground between this point and the eastern mine, considered the pushing on of those levels to be of the greatest importance. He was of opinion that the driving of the 60 and 70 fathom levels, at the eastern mine, and pursued with energy, as those ends were approaching the granite hill, and were a valuable depth to prove the eastern part of the mine.

Mr. T. KING enquired if any steps had been taken with regard to the sale of the mine. The SECRETARY replied that the committee had conferred with the agent upon the subject, but it was thought better not to advertise for sale until the agent had decided upon the result of the sale. The CHAIRMAN said he was of opinion it should be advertised in the Mining Journal, so that persons wanting an engine would know where there was one for sale.

The CHAIRMAN, in answer to a question, replied that at the last meeting proceedings were directed to be taken against shareholders in arrears of calls, by putting calls upon them, but the committee thought it better to adopt the less objectionable mode of forfeiting such shares, and selling them by public auction. He reminded shareholders that if that course were adopted they did not lose their remedy against the defaulting shareholders.

The SECRETARY had no doubt if that course were pursued the company would be able to raise considerable sums.

Mr. T. KING said he was supported in his opinion that it would not at present be prudent to resume the sinking of the engine by a report from Capt. Rich.

Mr. MUNDAY said he fully endorsed the views of Mr. T. KING, basing his opinion on the result of an inspection of the mine made by Capt. Nancarrow some months since.

The report and accounts having been unanimously received and adopted, the CHAIRMAN said the next question was with regard to the forfeited shares.

Mr. RICHARDS moved, and Mr. MUNDAY seconded, a proposition to the effect that a general meeting be held on Feb. 28, for the purpose of declaring absolutely all shares in respect of which any calls shall then remain unpaid, and to decide the time, and in

BRITISH MINES.

met in size and quality, being at present worth 18 $\frac{1}{2}$ per fm. for tin. The stopes in the back of the 12, east of Purser's shaft, are worth 30 $\frac{1}{2}$ per fm. The other bargains are much the same as last reported.

WEST DEER CREEK.—H. G. Webb, Feb. 13: Since last report the 65 fm. level end men have been cutting shaft-pit at Duke's shaft; in that level, consequently cannot report progress nor alteration in the 65 end. The stopes in the back and bottom of the 55 are yielding some good tinastuff. One of the tribute pitches in back of the 45, noticed before, having improved, is still looking well. The other pitches are yielding a good deal of low-class copper. The stamps engine are working well.

WEST SHIRBURN CREEK.—Richards, Feb. 10: The part of the lode being carried in the 150 east is more capely at present, and being very rough and wet is troublesome for exploring. There is no alteration in the character of the granite in the 150 cross-cut. We have passed through two small branches, containing quartz and iron, in the past week. The part of the lode being carried in the 162 cross-cut is improved for progress and in character, containing less capel and more quartz, with some small branches of grey copper ore. The part of the lode carried in the 162 east is composed of quartz, iron, capel, and gossan, containing a little grey-copper ore.

WEST WENDRON CONSOLS.—H. Kendall, Feb. 8: The engine and flat-rod shafts are being sunk as fast as possible. There is no change to notice.

WEST WINDSOR.—TREVILIAN, D. Oboke, Feb. 8: The 58, driving west from Carter's, there has been no lode taken down this week. The stope in bottom of the 48 is worth 14 $\frac{1}{2}$ per fm. The stope in back of said level, east of cross-course, is worth 10 $\frac{1}{2}$ per fathom. A stope further east is worth 4 $\frac{1}{2}$ per fm. The rise in back of the 38, against Charles's shaft, is communicated to the 28. The rise above the 20, against Charles's shaft, is up 8 fms. There is no alteration in the cross-cut north from Carter's shaft since last report. The rise above the adit, against Charles's shaft, is up 6 ft. Charles's shaft has been sunk this week 6 ft., the water being quick for sinking. The cross-cut south from Park shaft is suspended according to orders.

WEST WHEAL PHILVINGTON.—J. Thomas, Feb. 8: In the several levels there is no much change to notice since last report. In the 60 the ground is still favourable, but no lode taken down during the week. In the 120 the ground is a little improved, but the lode is not quite so large at present, producing low price tinastuff, and little copper ore. In the 130 some delay has been caused this week by the bucket-rod having divided in the clasp-joint, preventing operations from being carried on for three days. It is now repaired, and hope to resume driving that level on Monday. The other places are without change to notice. We have been this week engaged in fixing the pump at the new engine-shaft.

WEST WHEAL TOLGUS.—Feb. 12: South Lode: The lode at Taylor's engine-shaft is 2 $\frac{1}{2}$ ft. wide, composed of spar, mundle, and good stones of ore; the lode is evidently running in the 60 west, the cross-cut north, on the cross-course, is also becoming more and more of ore.—North Lode: In the 40, east of cross-cut, the lode is 18 or 20 inches wide, unproductive. The lode in the 50, east of cross-cut, is 3 $\frac{1}{2}$ ft. wide, composed of peach, mundle, and jack. The ground in the cross-cut, driving north from the south lode, in the 50, is moderately easy.

WHEAL AGAR.—W. Roberts, Feb. 11: In Windstow engine-shaft some good stones of ore have been broken from a branch which we believe is some 2 fms. or more north of the lode. In the 90 west the lode is 2 $\frac{1}{2}$ ft. wide, letting out a stream of water that has completely drained the level above, but so far the lode is unproductive. In the 90 west the lode is 3 ft. wide, producing stones of ore. In the 70 east the lode is 3 ft. wide, yielding some good tinastuff. The stope in back of the 80, and the pitches in back of the 70 are turning out well.

WHEAL ARTHUR.—T. Carpenter, Feb. 13: We have a good improvement in Watson's winze, sinking below the 50, on the middle lode; this winze is down 7 fms. 1 ft. below the 50; the lode is 2 ft. wide, composed of spar, prlan, mundle, and copper ore, and of the latter 10 $\frac{1}{2}$ per fm. I do not see any alteration in any other part of the mine to notice since last week's report.

WHEAL CREBOR.—Capt. Gifford, Feb. 13: At Cock's Shaft the lode is 2 to 3 feet wide, composed of capel, quartz, mundle, and copper ore—ground favourable for sinking. In the 60 east, in the cross-cut south, the ground is harder, being intermixed with floors of spar. In the 60 west, the cross-cut north, on the cross-course, is also becoming more and more of ore, with floors of spar, which makes our progress slower, but I think we are nearing the main lode. In the winze in the bottom of the 44 west the lode is large and hard, yielding some saving work for copper ore. In the pitch in the bottom of the 48 east the lode is not looking so well, but is still paying for working and yielding a profit.

WHEAL CUPID.—R. Pryor, Jan. 7: Setting Report: The 40 fm. level to drive west of engine-shaft, by six men, at 7 $\frac{1}{2}$ 10s. per fm., in a lode 3 ft. wide, composed of mundle, peach, and spar, with good tones of yellow copper ore—a kindly looking lode. The 40 cross-cut to drive south of this shaft, by six men, at 8 $\frac{1}{2}$ 10s. per fm. A winze to sink below the 24 fm. level, west of shaft, by two men, at 5 $\frac{1}{2}$ 10s. per fm.; this is below the tribute road, and is being driven from the level about 3 fms. west. There is some good ore has been raised, and was suspended in consequence of the water being too poor for the men to keep. The 40 fm. level, now being within about 2 fathoms of it, has almost drained the same.

WHEAL EDWARD.—M. H. East, Feb. 8: South Lode: In the 92 west the lode is 3 ft. wide, composed of capel, spar, mundle, and stones of ore; driving by six men, at 7 $\frac{1}{2}$ per fathom. In the 81 we have fixed a 9-inch drawing-lift, for the purpose of shambelling the water up to the shamble plunger in the 71. The work is all complete, and we shall commence to cross-cut the lode in the 81 west on Monday next. There are 3 fms. 3 ft. 6 in. driven by the winze in the 81 west, east of the cross-course, and I expect the rest of the level to be driven from the level about 3 fms. west. There is some good ore to four men, at 10 $\frac{1}{2}$ per fathom, 1 fm. stent, or cut through the lode. In the 61 west the lode is divided by a horse of kilias; the north part of the lode is 20 in. wide, and the south part 2 ft. wide, both of which produce good stones of ore; driving by four men, at 7 $\frac{1}{2}$ per fathom. The lode in Peter's stope, below the 61 west, is worth 6 tons of ore per fathom; set to six men, at 2 $\frac{1}{2}$ 10s. per fm. The lode in Small's stope is worth 4 $\frac{1}{2}$ tons of ore per fathom; set to six men, at 3 $\frac{1}{2}$ per fathom. Forrest's winze, below the 50 west, is down 1 fm. 4 ft. 6 in., and the lode is worth fully 4 tons of ore per fm. (6 ft.), but I have thought it advisable to suspend sinking it for the time, and put the men to rise in the back of the 40 west, where the lode is 4 ft. wide, and is running with all possible speed. The 40 fm. level is extended 7 fms. 5 in. west. Under the 40 fm. level, a change has taken place in the lode; it is worth at the present time fully 6 tons of good quality ore per fathom, and the ground is easy for working; set to six men, at 5 $\frac{1}{2}$ per fathom. The new rise will be commenced in the 50 about 3 fms. in advance of the 40, and I am of opinion that great light will be thrown on those points in a short time. I do not believe the results obtained in the 50 fathom level are any criterion the value of the ground, either above or below the level. I am of opinion the level is only a hard and poor floor of ground; the rise is set to six men, at 9 $\frac{1}{2}$ per fm., 2 fms. stent. In the 40 east the lode is 4 ft. wide, and, poor, we have suspended this rise for the present, and put the men to drive the 61 east, which we consider is of much greater importance; set to two men and two boys, at 4 $\frac{1}{2}$ per fathom. No. 4 rise, in back of the 50 east, is up about 10 fms., and we intend to drive west of the same in order to prove the ground; the lode is worth at present about 1 $\frac{1}{2}$ tons of ore per fathom; set to four men, at 6 $\frac{1}{2}$ per fathom. In Bray's cross-cut south, in the 50 east, no lode met with as yet; set to six men, at 6 $\frac{1}{2}$ 6s. per fathom.—Boundary Cross-cut North: In the 62 fathom level west, on the new north lode, the end is set to two men and two boys, at 6 $\frac{1}{2}$ per fathom; there is about 7 ft. more to reach the boundary; the lode is 2 ft. wide, producing stones of ore of good quality, with a promising appearance. There are six pitches set to 14 men, at 10 $\frac{1}{2}$ per fathom, and the ground is easy for working; set to six men, at 5 $\frac{1}{2}$ per fathom. All the workings, 40 $\frac{1}{2}$ 6s. set to nine men, at 23 $\frac{1}{2}$ per month, and the landing to one or more men, at 4 $\frac{1}{2}$ 10s. per month. The machinery is in good working order.

WHEAL EMMA.—R. Dunstan, Feb. 13: We have a further improvement in the 46 and 34 going east, and the lode in the 70 also continues as good as when last reported. The pitches also continue to look well.

WHEAL GRENVILLE.—G. R. Odgers, W. Bennetts, Feb. 8: The lode in the 110, west of the shaft, is 18 in. wide, with good stones of ore, partaking very much of the same appearance the lode did in the 100 before meeting with the ore. The north part at the 100 west is 1 ft. 6 in. wide, with good ore, and looking kindly. The lode in the 90 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 80 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 70 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 60 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 50 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 40 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 30 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 20 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 10 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 0 west is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 10 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 20 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 30 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 40 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 50 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 60 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 70 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 80 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 90 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 100 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 110 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 120 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 130 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 140 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 150 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 160 east is 1 ft. 6 in. wide, mundle, and good stones of ore, and looking kindly. The lode in the 170 east is 1 ft. 6 in. wide, mundle, and good stones

WHEAL SICILY.—T. Hodge, Feb. 12: In the adit level south, on the east lode, we have driven nearly 3 fms., and intersected a lode which is 12 in. wide, composed of soft spar, prisms, &c., a kindly lode; this end is just now entering the hill, and will, I think, reach the blue channel of ground in about 10 or 15 fathoms more driving, when an improvement may be expected. We have the castings for the balance-bob on the mine, and I expect to have the joints for the sweep-rod to-morrow, when no time will be lost in getting the wheel to work. The lode in East Jane is still looking well, and this being the same lode, and also so near our workings, we may reasonably expect the same results in this mine soon.

WHEAL UNION.—Thos. Glanville, Feb. 7: Tatwork Setting: The flat-rod shaft to sink below the 56 by nine men, at 36l. per fathom; lode 2 ft. wide, producing stones of copper ore. The 40 to drive east, on the middle lode, by six men, at 4l. 10s. per fm. The eastern shaft to sink below the 30 by nine men, at 16l. per fathom. The 18 to drive east of the eastern shaft by two men, at 6l. 10s. per fm.; lode 4 ft. wide, mixed throughout with copper ore. The 20 cross-cut to drive south of the old engine-shaft by four men, at 15l. per fathom. The 30 cross-cut to drive south of the engine-shaft by four men, at 6l. 10s. per fathom.

WHEAL UNITY CONSOLS.—W. H. Reynolds, Feb. 11: We have been driving by the side of the lode in the 50 west for the last 3 to 4 ft. to take advantage for taking down the lode. We have taken down the lode to-day, and have met with a good lode of ore. The bottom of the level is best, and 1 fm. of it would be worth 45l. or 50l., but as the upper part of the level is not so rich, we value the 3 ft. taken down at the rate of from 20l. to 25l. per fathom. We hope soon to have to report a still greater improvement.

YARNER.—R. Barkell, Feb. 12: The part of the lode we are carrying in the 30 west is 3 tons wide, worth 3 tons per fm. The stope in the back of this level is producing 3 tons per fm. The stope east of shaft is yielding 4 tons per fm. The winze sinking below this level is producing saving work. The winze sinking below the 30 is worth 8l. per fm. for length of winze (8 feet). No alteration in the 40 east or west. We are progressing favourably with our dressing and hauling. The masons intend to commence building the engine-house on Monday next.

WEATHER PREDICTIONS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In my last report I informed you that beyond a variation in the temperature there would be nothing to call for any special remark. The atmospheric disturbances I named for the 11th and 12th did not amount to gales, but only brisk wind at intervals, but very stormy in places. The weather for the next week will be somewhat similar, with perhaps strong winds on the 16th, 19th, and 21st. To all appearances another comet is approaching the sun; I will refer to this again in a future report.

Throgmorton-street, E.C., Feb. 14.

G. SHEPHERD, C.E.,

Author of "The Climate of England."

DERWENT AND CONSETT IRONWORKS.—We are requested to state that these works are in full operation—being very busy, and having many large orders on hand. This statement is considered requisite, in consequence of the misquotations by the local papers of some remarks which appeared in the letter of our Northern Correspondent, and in which they state that the works are actually suspended.

GOLD IN WALES.—The question whether the gold deposits of Wales can be remuneratively worked has now been satisfactorily and practically settled. Not only has a Welsh gold company paid continuous dividends for a period of twelve months, but the weekly yield of gold shows a gradual and steady increase. As we stated in the Journal of Jan. 25, the amount of dividends already distributed to the shareholders has reached 6825l.; after payment of which there still remained in hand a handsome balance to the company's credit. The Vigna and Clogau Mine, at which these marvellous results have been obtained, is but one of a series of highly valuable sets in the same district; and that the prospects of the surrounding properties are quite as encouraging as those of the Vigna and Clogau itself is admitted by all who are enabled to form an opinion on the subject. The produce of gold at this mine for the three weeks ending Feb. 8, was 99 ozs., 108 ozs., and 106 ozs. (five days' working), respectively, making together 313 ozs.—a result which is likely to give *déjà* to the companies which will be brought prominently before the public in the course of a few days. During the week the North Clogau and the Wellington Mines have been formally registered, and the East Clogau and other mines are likewise about to be worked by companies with adequate capital. These enterprises possess all the elements of success, and if properly managed, cannot fail to be extremely advantageous to all concerned.

SILVER IN SOUTH WALES.—MWYNDY IRON ORE COMPANY.—In the Journal of Feb. 1, it was stated that the ore of this company had recently undergone a most careful analysis by two independent authorities of great eminence, and in the ore known as the "blue rock," which forms the chief portion of the deposit at Mwyndy, the assay shows in one instance 32 ozs. of silver per ton, whilst in the other the quantity was increased to 37 ozs. per ton. Replying to the enquiries of several shareholders, we may now state that information, gained from a private source, proves to be substantially correct; two different assays, whose names are above suspicion, having produced from ore extracted from different parts of the company's property the results above enumerated. Other analyses, however, are at the present time being made, the results of which, as soon as known, will be published in these columns.

CHESTERFIELD AND MIDLAND SILKSTONE COLLIERY COMPANY.—Steps have been taken to ensure a vigorous development of this property, it having been proved to contain seams of the best descriptions of coal. Contracts have been entered into for sinking three shafts, and erecting the necessary machinery. Messrs. Suraim and Co., who are sinking within 100 yards of the above property, have just completed their shaft, and obtained coal of the best quality. Contracts have also been entered into for a large quantity of rails, for the purpose of constructing a line of railway from the pit's mouth to the junction of the Midland Railway.

RATING OF MINES.—A case of some importance was heard at the Knutsford Petty Sessions, just concluded; it was an appeal from an assessment for highway rates on a rock salt mine, &c., at Marston. The mine has not been worked since it fell out of lease, about six years ago, except that the water had been pumped for the preservation of the pit. The appellant contended that the terms of the Parochial Assessment Act did not apply to the rating of mines, which ought, he said, to be rated, not according to the probable rent they would let for, but according to the concurrent annual profit made during the period for which the rate was levied. In support of this contention he quoted Lord Campbell, who states that minerals, unlike land, are held by the surface, and until they are worked, and so made productive, they do not become a rateable subject matter, of Chief Justice Erie, whose opinion is "that the terms of the Parochial Assessment Act, which provides that property is to be rated at the amount for which it might be expected to let from year to year, clearly contemplate the surface of the soil which produces an annually recurring profit. They are inapplicable to the rating of minerals. Those who actually worked them are rateable, and for the profit actually made in the year of rating;" and of Mr. Justice Crompton, who confirmed the above opinions, and also stated "that in case of land the enjoyment is by taking the annually recurring profit of the surface, and in the case of mines by taking away the soil itself, and that what latterly became rateable only when the occupier receives a profit from them." The appellant, therefore, contended that as the mine in question had not been worked there could be no profit. But as the magistrates at a previous Quarter Sessions had decided that mines were nevertheless rateable, he submitted that this mine ought only to be assessed at a nominal sum. On behalf of the township it was replied that the terms of the Parochial Assessment Act did apply to mines; that this mine had been fairly valued by a respectable surveyor; that seven years ago it had been let for a considerable sum; and the result of a single year was no criterion; and that the average of a number of years ought to be taken as the value. The magistrates, however, reduced the assessment from 208l. to 50l.

FOREIGN MINING AND METALLURGY.

PARIS, FEB. 12.—Nothing new to signalise in cast and wrought irons. Business has been slack, and the prices have not varied. All the other metals have been equally calm. Copper from Lake Superior has reached 270 frs.; raw Chili, 132 frs. 50c.; and ore from Coro Coro, 245 frs. Banca tin costs 330 frs.; French and Spanish lead, 54 frs. 50c.; and raw zinc from Silesia, 47 frs. 50c.

It is announced that a new sounding undertaking, towards the northern limits of the commune of Hensies, in the Mons basin, has attained local earth at a depth of about 600 feet. The coal was reached without its being necessary to traverse beds of shifting sand, which it was apprehended would have had to be crossed.

A French company has recently undertaken to light Athens with gas, and another enterprise has received the concession of a line of railway from Athens to the Piræus, from which great things are anticipated. These movements have had the effect of directing increased attention to Greece as a field of mining speculation. A talented officer has discovered an important bearing of chromate of iron in the Isle of Tinos; and the Vicomte d'Archiac has made a report to the French Academy on the geological travels of M. Albert Gaudry, charged with the task of prosecuting at Pikermi, in Attica, researches for antediluvian bones, of which he has found a most interesting collection. M. Albert Gaudry extended his labours also to a geological study of the country, and states that tertiary soils are very much developed in Attica; some have been formed in the sea, others in lakes of sweet water, and others, again, are due to the alluvia of torrents. The secondary soils are represented by marbles, schists, and calcareous formations. They constitute the greater part of the mountains, and it is upon such soils that the Acropolis and the whole city of Athens are built.

A trial has been made at Gossolies of a new kind of chain, patented by M. Tonneau, of Jumez. M. Tonneau's chain was 0.72 in. in thickness, and was tested against an ordinary chain 1.01 in. in thickness. Both chains resisted very well a strain of 17 tons, but on the test being carried further the 1.01 in. chain broke at 26 tons. The Tonneau chain was still resisting at a pressure of 35 tons, when the fastenings to which it was attached broke, and the chain had to be withdrawn. M. Tonneau's chains are said to be very suitable for cranes, crabs, inclined planes, and cages in mines.

THE LORD WARDENSHIP OF THE STANNARIES.—Her Majesty has been pleased to direct letters patent to be passed in the name and on behalf of H.R.H. the Prince of Wales, appointing the Duke of Newcastle, K.G., Lord Warden of the Stannaries of Cornwall and Devon, and Rider and Master Forester of Dartmoor, in the room of his late Royal Highness the Prince Consort.

With next week's Journal we shall give a SUPPLEMENTAL SHEET, which will contain—Papers on the Relative Merits of the Different Systems of Working Metallic Mines and Collieries; on Iron Ores and Iron Manufactures, &c., in Mexico; American Coal-Oil; Application of Coal Tar to Dyeing; Review of Makina's "Science of Metallurgy"; Quarterly Sales of Lead and Black Tin; on the Impurities of Commercial Zinc; Heat-Conducting Powers of Amalgams; Mills and Forges in South Staffordshire.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, Feb. 14, 1862.

COPPER.			BRASS.		
Best selected, p. ton	£ s. d.		Sheets	Per lb.	
Tough cake	105 10 0	—	Wire	104d-11d.	
Tie	102 10 0	—	Tubes	95d-104d.	
Burra Burra	98 0 0	—		114d-13d.	
Copago	—	—			
Copper wire	0 1 1/4	—			
ditto tubes	0 1 2	—			
Sheeting & bolts	0 0 11/4	—			
Bottoms	0 0 1/4	—			
Old (Exchange)	0 0 10	—			
IRON.			FOREIGN STEEL.		
Per Ton.			Swedish, in kegs (rolled)	Per Ton.	
Bars, Welsh, in London	6 5 0	—	(hammered)	16 10 0-17 0 0	
Nail rods	5 17 0-6 0 0		Ditto in bags	17 10 0-18 0 0	
ditto	7 0 0	—	English, Spring	18 0 0-22 0 0	
St. Stafford, in London	7 0 0-7 10 0		Bessemer's, Engine Tool	44 0 0	
Bars, ditto	7 5 0-8 0 0		Spindle	30 0 0	
Hoops ditto	8 10 0-9 0 0		QUICKSILVER	7 0 0 p. bottle	
Sheets, single	9 0 0-9 10 0				
Pig, No. 1, in Wales	3 0 0-4 0 0				
Refined metal, ditto	4 0 0-5 0 0				
Bars, common, ditto	5 0 0	—			
Ditto, merchant, in Tees	6 10 0	—			
Ditto, railway, in Wales	5 0 0-5 2 6				
Ditto, Swed. in London	11 0 0-12 0 0				
To arrive	11 0 0-11 10 0				
Pig, No. 1, in Clyde	2 8 0-2 12 0				
Ditto, f.o.b. in Tees	—	—			
Ditto, forge, f.o.b. in Tees	—	—			
Staffordshire Forge Pig	3 10 0-3 12 8				
Welsh Forge Pig	—	—			
LEAD.			ZINC.		
Per Ton.			In sheets	Per Ton.	
English Pig	20 10 0-21 10 0				
Ditto sheet	21 0 0-21 5 0				
Ditto red lead	22 10 0	—			
Ditto white	28 10 0-30 0 0				
Ditto patent shot	22 10 0-23 0 0				
Spanish	19 10 0-19 15 0				

* At the works, 1s. to 1s. 6d. per box less.

REMARKS.—Our market continues to exhibit a marked absence of animation. Metals generally are difficult to move at current rates, and in many cases second-hand parcels still hang on hand, in spite of the tempting prices at which such lots are offered. There are several American orders not yet executed, but as they are not accompanied by the cash, shippers decline taking them. Shipments to America of spelter, tin, tin-plates, and copper, are rather on the increase.

COPPER.—Since the reduction in fixed rates of English, which was announced on the 3d inst., several good orders have been given out, chiefly for shipment to India, the actual selling rates being not above 104d., or 3d. per lb. under price; such, however, is the weak condition of the market, that no perceptible improvement has resulted from the large sales that have already been made, and ready sellers can still be found at these rates. Cake and tile can be purchased at 98d. A decline of about 3d. in the standard of ores has contributed to depress the market. Foreign is very slow of sale; sellers are obliged to make considerable concessions in price, in order to effect business. Burra Burra sold at 98d.; Kapunda, 99d.; Chili, 90d., sellers.

YELLOW METAL in fair request, selling price not above 84d. per lb.

IRON.—In railway bars there is no alteration to note. Merchant bars are in fair request at quoted rates. Staffordshire descriptions are somewhat more in demand. The prices paid leave manufacturers only a very trifling profit, and while the supply is so much in excess of the demand there is but little chance of any material improvement in prices being effected. Swedish bars remain quiet at former quotations: no business of any magnitude reported. Scotch pigs have been steady during the whole week at 49s., the market closing to-day at 49s. 1d., mixed numbers.

LEAD.—There is at present only a limited demand for English pig, chiefly for America; sellers, however, are tolerably firm at 22l. 10s. for ordinary soft quality, and 21l. 7s. 6d. for superior brands. Rather more enquiry has sprung up of late for sheets and bars; quotations unchanged. Spanish pig, 19l. 10s. to 19l. 15s.

SPELTER.—This metal is quiet and tolerably steady; business reported during the week at 18l. 2s. 6d. for cash, which is the present quotation; holders not unduly pressing sales.

TIN.—A limited enquiry exists for English kinds at slightly reduced rates. In foreign, Straits has changed hands as low as 116l., since which 117l. is quoted for cash. Banca, 123l., very slow of sale.

TIN-PLATES are rather firmer, in consequence of an increased enquiry for America.

NEW YORK, JAN. 24.—The rising tendency in prices has continued, but business is completely unsettled by the delayed action of Congress on the Tariff and Currency questions. It is supposed higher duties will be levied on iron, spelter, and lead; and tin taken off the free list. It is also thought that the Tariff will take effect at once; and an excise duty on the production of all domestic articles is talked of.—Tin: Under the impression that a duty of 3c. to 5c. per lb. will be imposed, holders have withheld their stocks from market, and the sales are, therefore, small. Within the last week, 900 slabs Straits were sold at 33c.; and 300 in Boston are reported at 34c. Banca is entirely nominal at 35c. to 36c. The importations since the 1st inst. are 1700 slabs Banca; about 400 slabs Banca are on their way from Europe and 2000 slabs Straits from Penang. We estimate the stock at 19,000 slabs Straits and 2000 slabs Banca—in all, Boston and New York, 21,000 slabs. Our prices are above the European markets; but future importations are liable, under present circumstances, to so many contingencies that we are entirely independent of foreign quotations. The shipments from the East Indies must necessarily be limited for a long time to come.—Spelter has been quiet; but prices have advanced to 6c. for Silesian and 6 1/4 c. for Leigh.—Copper: Prices have stiffened, although the business done has not been heavy. We quote Lake at 25c., with sales last week of 300,000 lbs. Minnesota and Quincy. We estimate to-day's stocks here and still to arrive from Detroit at 2,300,000 lbs. in first hands and 800,000 lbs. in second hands. The Baltimore smelters ask 25c. Some parcels of American copper are being returned from Europe; but the aggregate shipments will not be large. In Chili pig copper no transactions have taken place; the stock is unchanged, 1,100,000 lbs. The annual product of the Lake Superior Mines for the last four years has been as follows:—1861, 7400 tons ingot copper, at 2000 lbs. each; 1860, 6000 ditto; 1859, 4200 ditto; 1858, 3500 ditto. The condition of the mines is represented as highly satisfactory, and the yield of the current year is likely to exceed the figures of 1861; but before the winter's production can reach our market, the present stocks will be nearly exhausted. The Government is reported to have made a very large purchase of copper; but we do not know the quantity or price.—Lead has been dull, and on the arrival of a number of vessels with lead from Europe, an effort was made by one or two manufacturers to affect the market by forced sales. This resulted in the sale of from 400 to 500 tons of Spanish and English, at 6 1/2 c. and 7c. from shipboard; but to-day there are no sellers, in view of the pending change in the Tariff. Galena has been sold at 27 1/2 c. Stock of foreign, 1800 tons, and of Galena, 200 tons. The importations since the 1st inst. amount to 12,000 tons. The greater portion on the way, 2800 tons, has already been disposed of.—WINTERHOFF AND CO.

The MINING SHARE MARKET has been very active this week, and a few discoveries which have been long expected in one or two mines having come off, increased animation was given to the market, and a large business done. The fortnightly settlement of the Account, which took place on Friday, was very heavy in many descriptions of stock, and went off pretty satisfactorily. East Caradon shares, after being in great demand, and reaching 31 1/2, leave off 30 1/2 to 30 3/4; the latest report values the 50 east, on counter lode, at 85l. per fm.; the 60 east, 55l. per fm. Fawcett's lode, in the 60 east, 12l. per fm. The new lode, in the 60 east, 8l. per fm.; the 60 west, 18l. per fm. Marke Valley shares have been in good demand, and leave off 10 to 10 1/2. Devon Great Consols in continued request, at 40 1/2 to 41 1/2. East Carn Brea shares in good demand, and firmer, leaving off 10 1/2 to 10 3/4; the latest report states the lode in the 50 west to be worth from 3 to 4 tons per fm.; the 40 east, 4 tons; the 26 east, 3 tons; the 30 west, 3 tons. The winze below the 40 is worth 4 tons per fm. The winze below the 26 is worth 2 tons per fathom. Bottle Hill, 10s. to 12s. 6d.; Carn Brea, 70 to 75; Camborne Venn, 2 1/2 to 3. Condurrow shares have advanced to 75, 80. Craddock Moor shares in demand, at 26 to 28. Carn Camborne, 13s. to 15s.; East Basset, 52 to 54; East Russell, 2 1/2 to 3; East Wheel Grenville, 26s. to 28s.; Wheel Basset, 9 1/2 to 10 1/2. West Seton, 280 to 285, ex div.; at the meeting, on Tuesday, the accounts showed a profit of 3497l. 11s. 7d. on the two months, and a dividend of 8l. per share (3200l.) was declared, leaving 1066l. 19s. 4d. in hand, and ores sold to come into next account, 6357l. 6s. 3d., and 400l. in tin. The report shows that the ends are looking a little better since last meeting, and the stopes produce in the aggregate 63 tons per fathom. Great Re-

talack, 10s. to 12s. 6d. Great Wheel Fortune, 14 1/2 to 15, and more demand. New Seton, 65 to 70; North Basset, 3 1/2 to 3 3/4; North Croft, 2 to 2 1/2. North Downs shares have been fluctuating, and leave off 5 1/2 to 5 3/4. Drake Walls, 20s. to 22s. 6d.; at the meeting the accounts showed a balance in favour of the mine of 1831l. 14s. 7d., about 600l. more than at the previous meeting, though no dividend was declared. The mine opening up well, and laying open more tin ground than is being taken away, which, as the agents say, "is the best evidence of the state of the mine."

Wheal Unity shares have been in demand, and a large business done to 15s. and 16s., ex call, and leave off 1 1/2 to 1, with the call of 4s. per share paid. At the meeting the accounts showed liabilities over assets 921l. 10s. but as a large and valuable addition has been made to the sett, and an engine boiler required for the engine, which will be thus enabled to drain the mine ground, a larger call than usual was made. The discovery which has been so long looked for in the western levels has been met with in the 50, where the lode has been cut between two cross-courses, now worth 20l. to 25l. per fm., and daily expected to become richer. The 75 is within 4 or 5 fathoms of reaching the elvan, against which the ore in the 50 has been met with; this is another important point soon to come off, and an intermediate level. The 65 is also being driven to get into the ore, and it is to be hoped that the mine will now shortly become a paying concern, after so many calls and disappointments. Hingston Down shares have been flat at 2 1/2 to 2 3/4, but leave off firmer; the rise in the 85 is worth 3 tons per fathom. Great South Tolgus, 4 1/2 to 4 3/4; the lode in the 112 west is 2 1/2 feet wide worth 2 1/2 tons per fm. North Roskar shares have been in great demand, and leave off 24 to 25; North Robert, 24s. to 26s.; North Treskerby, 22s. to 24s.; Par Consols, 8 1/2 to 9; Providence Mines, 42 to 43. Rosewall Hill and Ransom, 3 1/2 to 3 3/4; we hear the 115 has been cut good north of the Traun. Wheal Grenville shares have been largely dealt in, and after advancing to 33s., 35s., leave off at 32s. to 34s.; the 80 cross-cut, to which we have often called attention as being a very important point, intersected the lode this week, and so far as cut into is worth 20l. per fathom for the South Caradon, 320 to 325. South Frances shares have been flat, declined to 100, 105; St. Ives Consols, 27 to 29; Stray Park, 30 to 31; Tincroft, 8 1/2 to 9; Trencrom, 3 1/2 to 3 3/4; South Caradon Wheal Hooper, 3 1/2; large purchases have been made in this mine of late by parties who have been watching its progress, and tempted by the low price of shares. It will be remembered by many of our readers that at East Caradon the lodes were only "very promising" at the shallow levels, and that a local company abandoned the mine. The present company commenced with determination, after cutting the counter lode in the adit, to sink at once to a depth of 70 fms. (or 50 fms. below adit), without attempting to exploit further at shallow levels; and during the progress of sinking the shaft the "calls" were necessarily so frequent, that the patience of many of the original holders was exhausted, the shares became a drug on the market, and were even sold as low as 1s. 6d. each. Now, we are not going to write neither do we wish our readers to infer, that South Caradon Wheal Hooper is going to be another East Caradon; but the analogous circumstances are somewhat peculiar, and as many shareholders who receive their periodic notices of calls are apt to get so disgusted with them that they throw the reports on one side without studying particular points, there are, on the other hand, a few who do study them, and profit by it when the time arrives, and shares are low. South Caradon Wheal Hooper, then, is nearly surrounded by the South Caradon sett, and close to East Caradon—in fact the engines of the three mines are little more than a stone's throw or so from each other. At the shallow levels in South Caradon Wheal Hooper the lodes were promising, but nothing permanently good was found, and the company have been for a long time sinking their shaft 90 fathoms deep from surface; and at this depth a cross-cut is now being driven to intersect the lodes, which have not been seen below the 62 fathom level, and at this depth the No. 7 lode, for a short distance, produced 1 ton copper ore per fathom, and is in the productive blue granite of the district. This 90 cross-cut, therefore, is an important point of operation; and to get to it, thus far, the company have expended 3l. per share, or 12,000l. in all. The No. 7 lode, which is of the greatest promise, is upwards of 30 fms. ahead, in rather hard ground; but there are two or three lodes between and the cross-cut end. This No. 7, however, is the great point, and the agent informs us, even at East Caradon, until they reached their goal course of ore, 70 fms. deep, they had not such rocks of ore as this lode yielded in Caradon Hooper in the 62. And, although it may take more than twelve months to make this particular lode in the 90 cross-cut, winze will be commenced in three weeks' time, to sink on the bunch of ore from the 62; thus proving the lode in depth, while the cross-cut is being extended, and opening up, probably, a piece of ore ground 30 fms. high. Wendon Consols, 13 1/2 to 14, and in demand. West Basset, 10 to 15 1/2; Wheal Buller, 7 1/2 to 7 3/4. Wheal Clifford Amalgamated in better demand, at 31 1/2 to 32 1/2. Wheal Crebor, 10s. to 11s.; Wheal King (Leland), 10 1/2 to 11; Wheal Ludcott, 2 1/2 to 3; Wheal Margaret, 48 to 45; Wheal Mary Ann, 15 1/2 to 15 3/4. Wheal Seton, 12 1/2 to 12 3/4; at the meeting a dividend of 30s. per share was declared. Wheal Trelawny, 10 to 19; at the meeting a dividend of 15s. per share was declared. The accounts showed a profit of 1265l. 6s. 6d. in the three months, and after paying the dividend, a balance of 1826l. 18s. 2d. is carried to the credit of next account. The north and south mines have been communicated, and some good ore ground laid open. The 142, north of Trelawny's, is worth 20l. per fm., and has been driven 45 fms. over a valuable piece of ground. The mine is now being worked in a very vigorous manner. North Mines 19s. to 21s., and in good request.

On the Stock Exchange a large amount of business has been done in Mining Shares during the week. The following prices were officially recorded in British Mining Shares:—East Basset, 52 1/2, 53 1/2, 53; Great South Tolgus, 4 1/2; Marke Valley, 10 1/2; Tincroft, 9 1/2; West Caradon, 30 1/2, 30 3/4, 30 1/2; Wheal Trelawny, 18 1/2, 18 3/4, 19; East Caradon, 31, 30 1/2, 30 3/4; East Carn Brea, 10 1/2, 10 3/4; Tamar, 1 1/2; West Basset, 13; Wheal Vor, 6 1/2; North Downs, 5 1/2; Herodsfot, 38; Devon Great Consols, 41 1/2, 41 3/4, 41 1/2; Mwyndy, 2 1/2; South Caradon, 31 1/2, 32; Wheal Basset, 10 1/2. In Colonial Mining Shares the prices were:—Australian, 3 1/2; Accord, 3 1/2; Scottish Australian, 1 1/2; Great Northern Copper, South Australia, 1 1/2, 1 1/4; Port Phillip, 1 1/2, 1 1/4; Dun Mountain, 1 1/2. In Foreign Mining Shares the prices were:—St. John del Rey, 63 1/2, 64, 64 1/2; United Mexican, 8 1/2, 8 3/4, 8 1/2; Linares, 8 1/2, 8 3/4; Lusitania, 1 1/2; Fortuna, 2 1/2.

The closing quotations for shares in new undertakings were:—Orest Marine, 7 1/2, prem.; Thames and Mersey Marine, 2 1/2, prem.; Universal Marine, 1 1/2, 1 1/4; London and Provincial Marine, 1-16 dis.; 1-16 prem.; Mercantile Fire, 3 1/2, prem.; Commercial Union, 1-16 dis.; 1-16 prem.; City of Rio Improvements Company, 1 1/2, prem. Mining shares were quoted 3 1/2, prem.; Hindostan Copper, 1 dis. to Santa Barbara, 1 1/2, prem.; Cardiganshire Consols, 1 1/2, prem.; Yuland mutana, 1 1/2, prem.

MINING EXCHANGE SHARE LIST.—The following is forwarded to us officially from the Mining Exchange as business done during the week:—SATURDAY, FEB. 8.—Unity, 10s. 6d.; Billins, 11; Great South Tolgus, 4 1/2, 4 3/4, 4 1/2; East Caradon, 30 1/2, 30 3/4, 30 1/2; North Basset, 3 1/2, 3 3/4, 3 1/2; Marke Valley, 10 1/2, 10 3/4, 10 1/2; Tincroft, 9 1/2, 9 3/4, 9 1/2; West Caradon, 31, 30 1/2, 30 3/4; East Carn Brea, 10 1/2, 10 3/4, 10 1/2; Tamar, 1 1/2, 1 1/4, 1 1/2; West Basset, 13, 12 1/2, 13 1/2; Wheal Vor, 6 1/2, 6 3/4, 6 1/2; North Downs, 5 1/2, 5 3/4, 5 1/2; Herodsfot, 38, 39, 38 1/2; Devon Great Consols, 41 1/2, 41 3/4, 41 1/2; Mwyndy, 2 1/2, 2 3/4, 2 1/2; South Caradon, 31 1/2, 32, 31 1/2; Wheal Basset, 10 1/2, 10 3/4, 10 1/2. In Colonial Mining Shares the prices were:—Australian, 3 1/2, 3 3/4, 3 1/2; Accord, 3 1/2, 3 3/4, 3 1/2; Scottish Australian, 1 1/2, 1 1/4, 1 1/2; Great Northern Copper, South Australia, 1 1/2, 1 1/4, 1 1/2; Port Phillip, 1 1/2, 1 1/4, 1 1/2; Dun Mountain, 1 1/2, 1 1/4, 1 1/2. In Foreign Mining Shares the prices were:—St. John del Rey, 63 1/2, 64, 64 1/2; United Mexican, 8 1/2, 8 3/4, 8 1/2; Linares, 8 1/2, 8 3/4, 8 1/2; Lusitania, 1 1/2, 1 1/4, 1 1/2; Fortuna, 2 1/2, 2 3/4, 2 1/2.

IRISH MINE SHARE MARKET.—Since our last publication, when we reported the quotation of the Mining Company of Ireland shares as a great request at 16l. 17s

At the Redruth Ticketing, on Thursday, 3624 tons of ore were sold, realising 18,828. 8s. 6d. The particulars of the sale were—Average standard, 123. 13s.; average produce, 63; average price per ton, 5. 4s.; quantity of fine copper, 232 tons 18 cwt. The following are the particulars:—

Tons.	Standard.	Produce.	Price per ton.	Ore copper.
2532	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0
2536	123 18 0	63	5 4	18 0

At the Swansea Ticketing, on Tuesday, 2464 tons of ore were sold, realising 32,270. 16s. The particulars of the sale were—Average standard, 123. 13s.; average produce, 63; average price per ton, 13. 2s.; quantity of fine copper, 375 tons 15 cwt. The following are the particulars of the sale:—

Tons.	Standard.	Produce.	Price per ton.	Ore copper.
2464	123 13 0	63	13 2	15 0

At the Dolcoath Mine meeting, on Monday, the accounts for November and December were shown. Balance last audit, 5282. 4s.; by copper ore sold, 2922. 4s.; tin ore, 111. 6s.; extra carriage of tin, 107. 10s. 7d. (less dues, 470. 11s. 3d.; and rates, 501. 11s. 3d.); By tin work and surface labour, 4349. 14s. 10d.; tribute, 970. 0s. 9d.; balance, 2022. 18s. 10d.—making profit on the two months' working, 3380. 14s. 4d. dividend of 2922. (9s. per share) was declared, and 686. 18s. 11d. carried to next account. The agents' report is among the Mining Correspondence.

At the Minera Mining Company meeting, on Jan. 28, the directors decided a dividend of 3s. 10s. per share, from the profits to last Christmas.

At the Herodsfoot Mine meeting, on Feb. 4, the accounts showed a profit for the four months' working to end of December of 2167. 19s. 8d.; a cash balance of 16s. 11d.; and a balance of assets over liabilities of 3145. 6s. 10d. A dividend of 1s. per share was declared. Messrs. Loam, Glubb, Caunter, Davey, Hawker, and Land were re-elected members of the committee. Captain T. Trevillion reported on the mine, which was in good working trim, never better at any former time. The qualities of the ore were never richer than during the last four months, as the average price for the two 55-ton parcels realised 27. 16s. per ton; this is very satisfactory, especially as the reserves of ore ground in the mine are not in the least diminishing, but rather are increasing, and they look forward with confidence for regular and continued dividends.

At the Mount Pleasant Lead Mine general meeting, held at Chester, on 30, a very satisfactory report was presented by the manager, and a dividend of 11s. was made. [Since the meeting another fine lot of ore has been cut into the mine driving.]

At the Trelawny Mine meeting, on Feb. 8 (Mr. W. Page in the chair), the accounts for the quarter ending November showed a profit of 1265. The assets exceeded liabilities by 2106. A dividend of 780. (15s. per share) was declared, and a balance of 201. carried to the credit of the next account. Details in another column.

At the Kelly Bray Mine meeting, on Thursday (Mr. J. Field in the chair), the accounts showed a credit balance of 471. 8s. 3d. A call of 2s. 6d. per share was made. Messrs. John Field, Richards, and Mundy were elected the committee of management. Details in another column.

At the Charlotte United Mines meeting, on Feb. 6 (Mr. Alexander in the chair), the accounts for the four months ending November showed—Balance last audit, 12s. 3d.; August mine cost, merchants' bills, &c., 1014. 9s. 4d.; September, 15s. 8d.; tin ore, 1025. 12s. 9d.; Nov., 1025. 12s. 9d.; Mr. Pike's lease, 261. 5s. 9d.; tin, 12s. 7d.; Call, 2894. 13s. 9d.; copper ore sold, 2922. 0s. 3d.; tin, 254. 8s. 9d.; balance, 1641. 14s. 10d. The report of the agents, Capt. R. Kendall and Mr. Berthel, recommended an application to the lords to remit dues until the mine becomes remunerative. A call of 6s. 6d. per share was made. It was resolved that a petition to the Stannaries Court be filed forthwith against all shareholders in arrears of call; and the operations recommended by the agents be carried out with vigour; and that an action be made to the lords for a suspension of the dues. The committee of management were re-elected.

At the South Dolcoath and Carnarthen Mines meeting, on Tuesday, the accounts showed a debit balance of 1367. 4s. 6d.—to meet which they have outstanding 351. 2s.; and 16 tons of ore, estimated at 200. Capt. Wm. Roberts reported on the mine: "Ten men are working three pits, at 10s., 12s., and 13s. 4d. in 17. The output of 846. 12s. 9d., which was divided at 17s. per share. Capt. J. Rowe reported on the mine: "We have attached a drawing-machine to our stamps, which answers our expectations, saving us at the present time 12s. per month in drawing charges. The new pitwork and coverings for dressing have materially increased the costs of the past quarter, but we are glad to say that the surface workings of this mine are progressing towards a state of great efficiency."

At the New Wheal Frances meeting, yesterday (Mr. Dunsford in the chair), the accounts showed a debit balance of 1927. 4s. A call of 1s. per share was made. The report of the agent (Captain Carkeo) was read, as were also the reports of J. Vivian and Capt. Teague. A long discussion ensued as to the future course of the mine, during which several shareholders stated that an agent who knew the mine had offered to work the mine and pay the whole of the costs, and failing in which would forfeit his salary. A resolution was eventually passed to the effect that, in consequence of the large amount of the arrears of call, the operations at the mine be suspended until further notice, and proceedings be instituted against defaulters.

At the New Wheal Vaddon meeting, held at the Midland Hotel, Derby, on 1st, Mr. Weston in the chair, the accounts showed—Labour cost, Sept., Oct., and Nov., 1861, 6s.; merchants' bills, 147. 0s. 4d.; sundry accounts, 27. 10s. 8d.; old liabilities, 87. 12s.; call at Bolitho and Co.'s bank, 21. 4s. 9d.;—377. 13s. 9d.—Balance at last account, 47. 2s. 5d.; on account of last call, 73. 10s.; arrears, 115. 6s.; one sold, 123. 6s. 11d.; Batten & Co. (bankers) in advance, 21. 8s. 5d.;—377. 13s. 9d.—The report of the agent was adopted; and, in consequence of the satisfactory state of the mine, it was not considered necessary to make a call. Capt. Peter Floyd estimated that for the next three months will be about 40s. per month in excess of the tin sales.

At the West Tolvaideen Mine meeting, held at the Midland Hotel, Derby, on 4 (Mr. Weston in the chair), the accounts showed—Due to bankers last account, 4s.; labour cost for Sept., Oct., and Nov., 853. 7s. 1d.; merchants' bills, 101. 4s.; tin, 417. 6s.; arrears, 91. 10s. 6d.;—952. 2s. 5d.—On account of call, 417. 6s.; arrears, 91. 10s. 6d.;—952. 2s. 5d.—The report and accounts were adopted; and a call of 3s. per share was made. Capt. C. Pascoe estimated that for the next three months at 116s. per month.

At the St. Ives Wheal Allen meeting, held at the mine on Wednesday, the accounts showed a debit balance of only 389. 15s. against the mine at the end of December, and a call of 7s. 6d. per share was made. The 30, east of Gleaser's shaft, is worth 20s. per ton, and they have had a good lode in this end for the last 12 fathoms; and east of Rodger's shaft, is worth 20s. per ton, and the shaft is about to be sunk. They have sold 6 tons 7 cwt. 2 qrs. 30 lbs. of black tin, and in future regular sales will be made, while the costs will be much lighter than hitherto, all the surface work being complete. The agents state, "The mine is gradually improving, and the tin will continue to do so."

At the Stencroft and Mawla United Mines general meeting, on Feb. 4, the accounts showed a debit balance of 605. 3s. 5d. A call of 10s. per share was made. Thos. Faulk was appointed manager and purser, at a salary of 2s. 2s. per month.

At the Great Wheal Martha meeting, to be held on February 22, the report, to be presented, states that—"Looking at what has already been obtained, the most certain prospects before us, your directors have little fear that in a short time the value of your shares, which they are sorry to see, from no real cause, will be able to congratulate you upon the possession of one of the best dividend mines in the district. In order that your board should have a more perfect knowledge of the capabilities of the mine, as well as of its local management, a deputation of the directors visited it some months ago, and made a most complete and searching examination, and a more economical management."

although the delays which have disappointed them may be partially accounted for by the unusually heavy rains, which have impeded the various workings, still they cannot but express their concern that the carriage of the heavy pumps from the wharf to the mine should not have been effected whilst the roads were in good condition. The sinking of the shaft below the 94 depended upon their erection, and it is to be regretted that this important operation was not commenced before November. Their efficiency since that period is, however, very satisfactory, and it is gratifying to find the prospects of the mine are encouraging. The accounts show a balance in hand on December 31 (including money at loan) of 4571. 14s.

LEEDS, FEB. 13.—There is a slightly improved tone manifested in the Mining Share Market: more enquiries have been made, but the amount of business done is still limited. We hear more encouraging reports from some of the mines held here.—JOHN GLEDHILL AND CO.

THE AUSTRALIAN MAIL.—The reports brought home by the Australian mail, which will be delivered in London this (Saturday) morning, are generally of a satisfactory character. The Melbourne Ministry, with Mr. O'Shaughnessy as Chief Secretary, is as strong as could have been hoped for—stronger, in fact, than even the Government itself had expected. New Zealand is still attractive to gold seekers, owing to the private accounts as well as the statements of the gold actually obtained being very encouraging. The Lachlan diggings (in New South Wales) have not proved so profitable as was anticipated. All accounts agree as to the yield being extraordinary—equal to that of Ballarat in its palmiest days; but the payable ground is confined to a very small area, being not more than 1/4 mile long and 100 yards wide. This piece of ground is held by some 300 miners, who, out of the whole population of 6000 or 7000 persons, are the only ones who are making anything, the sinking there being either fortune or nothing. With regard to the copper mining companies, the accounts are, upon the whole, satisfactory, though a rumour (the correctness of which we cannot vouch for) was afloat in the City late last evening that the Lion Accord company had met discouraging news. The news from the South Australian copper mines in the North cannot fail to have a good effect upon the shares of the Yudanumutans Company, few shares in which remain to be subscribed for; notice has been given that the list will be closed on or before Tuesday, and as the mines proposed to be worked are described as exceeding in richness any of those at present worked in the colony great interest naturally attaches to them.

COAL MARKET.—On Monday 38 fresh ships arrived for market. The weather having become cold and frosty there was more disposition to buy house coals, and the sales made were at 6d. per ton advance on last day's prices. In Hartley's and manufacturers' no change. Best house coal, 16s. 6d. to 17s. 6d.; seconds, 14s. to 15s.; Hartley's, 13s. to 14s.; manufacturers', 11s. 6d. to 13s. 6d.—On Wednesday, there were 25 arrivals. The change to mild weather acted unfavourably upon house coals, and the amount of business was trifling, at slightly lower prices. Hartley's and manufacturers' were alike depressed.—On Friday, the arrival of 61 ships, with the prospect of further supplies on Monday, caused an indisposition to purchase, and the sales were very limited at about last prices for all descriptions. Hutton Wallend, 17s. 6d.; South Hutton Wallend, 17s. 6d.; Lyon's Wallend, 14s. 6d.; Hartley's, 13s. to 14s.; manufacturers', 11s. 6d. to 13s. 6d. per ton—66 cargoes unsold: 90 ships at sea.

CONTRACTS FOR COAL.—The Admiralty require the supply of 2100 tons of South Wales Coal for Malta; they also require 1500 tons of South Wales Coal, for Corfu; and 1050 tons of South Wales Coal, for Gibraltar.

THE SALT TRADE.—During the month of January the total export of white salt from Liverpool and Birkenhead was 31,731 tons, against 18,880 tons during the corresponding month of 1861. The counties to which the exports have been made were—United States, 8681 tons; British America, 1863 tons; Calcutta, 13,913 tons; Baltic and North of Europe, 930 tons; Australia, 1491 tons; West Indies and Africa, 2937 tons; and France and the Mediterranean, 185 tons; the remaining 1741 tons were sent coastwise. The exports of rock salt from Liverpool and Birkenhead to all parts were 1495 tons. From Runcorn the exports were—White salt, 6980 tons; rock salt, 946 tons.

PUBLIC INCOME AND EXPENDITURE.—The gross public income of the United Kingdom in the year ended Sept. 30 was 69,806,160. 15s. 11d.; the total expenditure was 71,251,676. 8s. 7d.; the excess of expenditure over income in the year being 1,445,515. 11s. 8d. The balances in the Exchequer on the same date amounted to 2,882,001. 0s. 7d.

We learn with pleasure that Mr. Robert Hunt has undertaken to produce for Her Majesty's Commissioners a HANDBOOK, descriptive of the International Exhibition, and a SYNOPSIS of its contents. Those who remember the facilities afforded to visitors by the little work (the SYNOPSIS) of Mr. R. Hunt in 1851 will be satisfied that the task could not have been placed in the hands of anyone more familiar with the requirements of the mass of visitors than this gentleman is. We doubt not but he will also produce a HANDBOOK which will become a necessity to every visitor who desires to carry away any information from this world-wide gathering.

THE FEARFUL ACCIDENT AT THE BRYN GWIG LEAD MINE.—In another column appear the details of this sad catastrophe. Up to the present time all the information that has been collected is necessarily of an imperfect character. According to the testimony of the miners who were employed in the underground operations at the time the inundation took place, it appears that the flooding commenced at the 66 fathom level; but, from the information in possession of the agents, no old workings were known to exist near that point. The two agents late on Tuesday, the day previous to the accident, went through the whole of the underground operations, when there was not the slightest indication of any danger from such a cause, the more especially as the Bryn Gwig Lead Mine has always been considered very remarkable for an absence of water in it. Every exertion is being made to recover the bodies of the unfortunate sufferers, and we hear by a telegram received at the office of the company late yesterday afternoon that by this (Saturday) morning the mine will be drained to the 66 fm. level, where, it is expected, eight of the bodies will be recovered. Information of the calamity has been forwarded to the Lord Mayor and to the Mayor of Newcastle, in the hope that some portion of the Hartley Colliery Fund may be devoted to the relief of the wives and families of the unfortunate Flintshire miners. A subscription has been set on foot, and contributions will be thankfully received by Mr. Dunsford, the secretary of the company, at his office, Adam's-court, Old Broad-street.

THE HARTLEY ACCIDENT.—In the House of Commons, on Thursday, Mr. H. B. Sheridan asked the Secretary of State for the Home Department whether, with reference to the recent calamitous accident at the Hartley Coal Pit, he had received any information from the Inspectors of Mines with reference to the necessity of there being two shafts to each working mine; and whether his attention had been drawn to the verdict of the jury at the coroner's inquest at Newcastle, and the recommendation contained therein, that all working collieries should have a second shaft or outlet, and the further recommendation with reference to the beams of colliery engines being made of malleable instead of cast metal; and, further, whether it was his intention to take any, and what steps in connection with these proceedings and recommendations?—Sir G. Grey said the question had been partly answered by the papers upon the subject which had been laid on the table of the House. The report of Mr. Blackwell, when received, would no doubt be found to contain very valuable information, and that information and any suggestions he might offer would be carefully considered, with the view to the adoption of such measures as might appear practicable to prevent the recurrence of such a fearful loss of life as had occurred at the Hartley Colliery.

MINE ACCIDENT.—At Wheal Friendship, on Monday, William Crocker, aged 50, was killed, and his sons Joseph and William, as well as Thomas Mitchell, were seriously injured—the latter especially—by the fall of about 60 tons of rock in their working place, between the 160 and 170 fm. levels.

LEAD ORES.				
Mines.	Tons.	Price per ton.	Purchasers.	
Sold on the 5th February.				
Penpompren	20	£13 1 0	Sims, Williams, & Co.	
Sold on the 13th February.				
Masseyreddin (Talargoch)	45	13 4 0	A. Eytton.	
Cottis Llys (Talargoch)	27	13 5 6	Walker, Parker, & Co.	
Deep Level	25	12 15 6	Newton, Keates, & Co.	
Rhosmor	25	12 15 6	Walker, Parker, & Co.	
Orsedd	25	12 15 6	A. Eytton.	
Bryn Gwig	45	12 16 0	Newton, Keates, & Co.	
Parrys Mine	35	12 16 0	Walker, Parker, & Co.	
Kilmorey	4	12 7 6	Newton, Keates, & Co.	
North Henblas	8	12 1 0	Walker, Parker, & Co.	
ditto	2	14 1 0	Walker, Parker, & Co.	
Stant-y-lago	12	12 0 6	ditto	
Holywell Level	10	14 0 6	ditto	
Llangynog	20	12 10 0	ditto	
Bruseplano Mine	17	9 12 6	Newton, Keates, & Co.	
ditto	3	6 2 6	ditto	

BLACK TIN.				
Mines.	Tons c. q. lbs.	Price per ton.	Amount.	Purchasers.
Sold on the 5th February.				
Garrilina	8 13 3 11	£70 5 0	£628 4	1—Blascoe Co.
ditto	2 4 1 3	59 0 0	130 12 3	ditto
Sold on the 6th February.				
North Roskear	6 6 1 27	65 10 0	414 5 2	2—Trefliffe.
Sold on the 8th February.				
Gt. Wh. Fortune	15 4 2 18	—	1124 18 6	—
Sold on the 11th February.				
Redmoor	4 0 0	67 0 0	268 0 0	—
Sold on the 12th February.				
Wendron Consols.	19 1 0 13	—	1290 16 0	—Chyandour.

COPPER ORES.				
Sold at LIVERPOOL, by Mr. James Moore, ex Prince of Wales, from the Brada United Mines, on February 7.				
Mines.	Tons.	Price per ton.	Purchasers.	
Lot 1	—	£3 3 0	James Keys & Son.	
2	—	1 0 6	Newton, Keates, & Co.	

COPPER ORES.				
Sampled January 22, and sold at Swansea February 11.				
Mines.	Tons.	Produce.	Price.	
Cobre	100	11 1/4	£9 15 6	
ditto	99	11 1/4	9 16 0	
ditto	94	11 1/4	9 17 0	
ditto	91	11 1/4	10 0 0	
ditto	81	11 1/4	10 1 0	
ditto	55	21 1/4	19 5 0	
ditto	54	21 1/4	18 10 6	
ditto	42	21	17 12 6	
ditto	9	64	52 6 0	
ditto	1	22 1/2	18 18 0	
ditto	99	11	9 11 0	
ditto	95	11 1/4	9 5 0	
ditto	97	11 1/4	9 5 0	
ditto	96	10 1/4	9 3 0	
ditto	94	11	9 9 6	
ditto	10	62 1/2	63 2 0	
Berehaven	128	10 1/4	8 14 0	
ditto	108	10 1/4	8 19 0	
ditto	102	9 1/4	8 3 0	
Berehaven	98	10 1/4	£9 3 0	
ditto	79	10 1/4	10 1/4	
Wh. Maria	30	23 1/2	21 0 0	
ditto	47	23 1/2	20 12 0	
ditto	46	24 1/2	21 10 0	
ditto	45	23	20 3 0	
Ooklip	53	34	29 15 0	
ditto	47	34	29 14 0	
ditto	32	33 1/2	29 11 0	
Spectakel	30	24	21 0 0	
Knockmahon	104	11 1/4	9 8 0	
ditto	76	13 1/4	10 10 0	
California	66	15 1/4	13 0 0	
ditto	64	15 1/4	13 9 6	
ditto	62	24 1/2	21 12 6	
Gt. Northern	63	19 1/4	16 7 6	
of So. Aus.	—	—	—	
African	1	13 1/4	13 5 0	

TOTAL PRODUCE.					
Cobre	1116	£12920 18 6	Knockmahon	180	£1775 12 0
Berehaven	559	4941 8 0	California	192	3061 3 0
Wheal Maria	188	3913 19 0	Great Northern	63	1031 12 6
Ooklip	132	3918 5 0	So. Australia	1	13 5 0
Spectakel	33	694 13 0	African	1	13 5 0
<hr/>					
COMPANIES BY WHOM THE ORES WERE PURCHASED.					
		Tons.		Amount.	
Copper Miners' Company	96	£1726	5	6	
Freeman and Co.	161	2549	1	0	
P. Grenfell and Sons	804	10872	13	6	
Sims, Williams, and Co	389	6809	18	0	
Vivian and Sons	512	4733	18	0	
Williams, Foster, and Co.	330	3982	2	0	
Sweetland, Tuttle, and Co.	182	1596	18	0	

Copper Ores for sale at Swansea, Feb. 25.—Cobre 96, 95, 94, 93, 85, 49, 47, 40, 6.—California 76, 65, 64, 60, 59, 7.—Suisse ore 62, 5, 3, 1.—Trump Island 27—Bristol Regulus 8—Erin's ore 2.—Total, 1047 tons.

AVERAGES.				
Produce.	Price.	Standard.	Produce.	Price.
British	10 1/4	£9 1 6	Standard.	100 1 0
Foreign	17	14 16 3	Standard.	100 1 0
Sale				
15 1/4				
£13 2 0				
£101 3 0				
Totals—British, 739; Foreign, 1725=2464 tons (21 cwt.)				

AVERAGES OF LAST SALE.

Produce.	Price.	Standard.
British	9 1/4	£8 2 0
Foreign	17 1/4	15 18 0
Sale		
13 1/4		
£11 18 0		
£105 12 0		
Totals—British, 1162; Foreign, 1090=2252 tons (21 cwt.)		

Sampled Jan. 29, and sold at Tabb's Hotel, Redruth, Feb. 13.

	ditto	60	3 16 0	ditto	62	6 2 0
	ditto	54	1 16 6	ditto	47	7 11 0
	ditto	53	2 7 6	ditto	45	8 19 0
	ditto	51	3 6 6	East Alfred Consols	100	3 19 0
	ditto	50	4 1 6	ditto	41	3 15 6
	ditto	47	3 6 6	ditto	32	6 13 0
	ditto	31	1 13 6	Charlotte United	62	5 13 6
	ditto	30	1 13 0	ditto	43	9 5 0
West Basset	74	4 14 6	ditto	38	7 7 0	
ditto	72	5 16 6	ditto	22	2 14 0	
ditto	71	4 6 0	Prosper United	73	5 19 0	
ditto	70	4 1 6	ditto	33	4 17 0	
ditto	61	2 16 6	Copper Hill	45	1 18 0	
ditto	60	7 11 0	ditto	12	6 0 0	
ditto	42	7 8 6	ditto	12	13 18 6	
ditto	33	6 12 6	Botallack	39	5 12 0	
ditto	24	5 4 6	ditto	27	9 11 0	
ditto	11	3 14 6	ditto	22	4 18 0	
Carn Brea	112	0 3 0	Rosewarne United	45	5 9 0	
ditto	61	5 0 0	ditto	38	8 12 0	
ditto	59	7 6 6	West Fowey Consols	60	8 0 0	
ditto	46	2 17 6	Treloweth	43	6 11 0	
ditto	45	3 4 0	ditto	15	1 3 0	
ditto	39	4 10 0	ditto	14	2 11 0	
ditto	32	6 9 0	Wheal Buller	36	21 0 0	
ditto	25	3 3 0	ditto	39	10 0 0	
Levant	86	6 0 0	Wheal Anna	27	2 5 0	
ditto	83	1 18 6	ditto	26	4 1 0	
ditto	60	6 5 0	Wheal Unity Consols	24	6 6 0	
ditto	57	6 1 6	Rosewarne Consols	18	7 19 0	
ditto	7	22 12 6	ditto	6	25 18 0	
ditto	2	18 12 6	New Wheal Hender	16	5 16 0	
Par Consols	71	7 17 6	ditto	8	2 11 0	
ditto	70	10 19 0	South Dolcoath	16	11 18 0	
ditto	69	0 0 0	Great Fowey	11	1 18 0	
ditto	40	1 12 0	Camborne Consols	11	9 1 0	
ditto	36	3 14 0	West Tolvaaden	5	3 8 0	
Pendean Consols	98	2 12 6	ditto	4	5 5 0	
ditto	45	2 17 0	Trencom	2	25 19 0	
ditto	35	0 18 0				

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Notices to Correspondents.

* * Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we request that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

58.—Can any reader inform me of a work in which the treatment of chrome iron ore is popularly explained?—H.

ZINC ORES.—The principal purchasers of blende and calamine are Messrs. Vivian, of Swansea; Messrs. Wright Brothers, of Rugeley; Mr. Thomas Atwood, Carlisle; Mr. W. Marsden, Warrington, near Bristol. In addition to these, there are sometimes purchasers from abroad; these are best obtained by advertisements. I have been successful in obtaining customers from Hamburg when the quantity has been extensive enough to make the purchase worth while, by advertising in the *Mining Journal*.—A MANAGER TO A BLENDE MINE FOR MANY YEARS: *Pencorse, Feb. 11.*

HARTLEY COLLIERY.—Your correspondent in his anxiety to anticipate the searching investigation before the coroner and jury has fallen into two manifest errors—the staple pump was worked by the main beam, not the jack-head beam, as his drawing represents. Also the downcast part of the shaft was the coal-drawing side, not the pump side. The failure of a nut within the cylinder was not mentioned during the whole investigation.—W. C.

VENTILATION OF COLLIERIES.—In the middle of last year I put some questions to Mr. R. Hugh Hughes, but he either would not or could not answer them.—1. Has he ever examined personally the underground workings of a large colliery?—2. Does he think that such a system would have been left for him to discover, after the life-long experience of such men as Messrs. Buddie, Wood, Forster, and P. J. Taylor, besides hundreds of others, if it would have answered the end? To Mr. Hughes, therefore, I say the so-called "my system" has been before the public over and over again. Go and examine the state of things to which you purpose applying it, and then you can speak with authority if still, in your mind, satisfied of its utility.—ALPHA.

IRISH MINING.—I notice by the Journal that Mr. N. Ennor has recently paid a visit to Ireland. It cannot be supposed, however, that he visited your correspondent, "A Wicklow Miner," or the mines in his locality, for we may be sure that the usual plain speaking of an old practical miner, like Nicholas Ennor, would not be calculated to suit the Crysarist, or even the Connors system. Nor can it be supposed that he would be allowed to inspect the Laganure Lead Mines, in the same locality (known to be situated in the centre of the best lead ore district in Ireland yet discovered), the profits of which, however, are said to be transferred to the creditors of the Ballycur Smelting Works, for some purpose or other. The fact is well known from practical experience in this country by the few, and more generally so by a great majority of the smelters of England and Wales, that lead ores from the primitive rocks, such as the Laganure Mines, cannot be smelted alone (I mean without a mixture of ores from other rocks) but by a great sacrifice. Profit by such smelting is quite out of the question, and the truth of this the directors and shareholders would soon realise if they had to purchase their ores by public ticketing. I shall have more to say hereafter on the price of copper ore raising, there having been such wonders done of late. One would be inclined to ask,—Has there been no discovery of ore made in any of the levels? No Capt. Ennor or any one else, it is believed, has been called in to inspect and decide this matter fairly between man and man.—A SUBSCRIBER.

MINING STATISTICS.—"A. C."—The statement is incorrect: a new lease, for 27 years, was granted to the Devonshire Great Consolidated Mining Company in 1859.

NORTH ROSKEAR—NEW WHEAL SETON.—In last week's Journal, when comparing North Roskear and New Seton, it is said the latter is more than double the price of the former. As this statement is likely to mislead the public, please correct it in next week's impression. According to your own statement, the market price of North Roskear is 25s., and New Seton 65s.—the first is in 700 shares, the latter 400.—A SUBSCRIBER.

Mr. Evan Hopkins is on a tour of inspection in Ireland. Letters addressed to the Imperial Hotel, Sackville-street, Dublin, will reach him.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, FEBRUARY 15, 1862.

The lamentable accident at the Hartley Colliery has again roused public attention to the enormous sacrifice of human lives in our coal mines; and, as is usual on the recurrence of these wholesale immolations, the press has teemed with infallible remedies and ingenious nostrums for the amelioration and extinction of so monstrous an evil. All these suggestions and plans are unquestionably well intentioned, and are meant in all sincerity to serve the cause of humanity; yet it is feared that in too many instances they do a great deal more harm than good; and do more to perpetuate a vicious system than to destroy it. Men who have never seen a colliery, who are in profound ignorance of the mode and appliances of coal mining, and even of the most elementary knowledge upon the subject,—engross the public attention with their crude and impracticable schemes, until the interest caused by the excitement of the accident has subsided; the direct tendency of their impracticable suggestions being to deter those who are really both able and willing to discuss the subject in a fitting manner from contributing practical and useful information. It is to this cause, in part at least, that so little good has resulted from the dearly-bought experience of ever-recurring accidents. Had the attention of the public been steadily directed to the well-known remediable measures by writers intimately and practically acquainted with the working of collieries, and not dissipated by the imaginative schemes of those who know nothing about it, we should not now have to deplore the horrible deaths of more than 200 human beings in Hartley Colliery.

Many years ago we earnestly advocated the absolute necessity there was for the prohibition of all single bratticed-pits, and that no colliery should be allowed to be worked unless it had at least two pits. We have returned to the subject repeatedly, and urged upon Parliament the great importance of making this compulsory. Had these representations been supported by the public, such a provision would have been inserted in the Inspection Act. The manifold dangers of the single bratticed-pit system are so obvious, and have been so recently terribly exemplified, that it is not necessary now to dwell upon them; and, indeed, few have ever ventured to defend their adoption, save for economical reasons, much less have they pretended that one pit was as safe as two. Unfortunately, the bad example of the North has found imitators in districts where such collieries were unknown until the discussions on the ventilation question revealed to the southern coalowner this cheap mode of opening and working

a colliery. The prestige with which the northern viewers were rightly or wrongly invested, and the acquiescence conferred on the system by Parliament in its non-prohibition in the Inspection Acts, materially tended to the wide-spread increase of bratticed pits. And what was worse still, the system was imported into new districts, without the requisite knowledge, or willingness, to enable the parties to construct the brattice in the same substantial manner as in the North, recourse being had to brattice-cloth instead of using substantial planking; thus introducing new elements of danger instead of decreasing them. It is due to the Inspectors to say that in many, if not in all, districts they have honourably and firmly opposed this life-destroying system, although their efforts are necessarily less effective than they would have been had the Act for the Inspection of Mines contained a direct and positive prohibition.

The only plea that has been urged for the tolerance of single-bratticed pits is that the expense of sinking an additional pit is so great as, in a commercial sense, to render it impossible, and that were such a measure to be made imperative many collieries would be closed. To support this position, the cost of three or four extraordinarily expensive pits in the county of Durham have been adduced, whilst the ordinary cost of shafts has been studiously kept out of sight. It is somewhat unfortunate for the advocates of single bratticed-pits that in the collieries worked by these enormously expensive shafts there are, we believe, in most, if not in all of them, two shafts, and that these collieries have all been highly remunerative.

The cost of sinking pits depends so much on unforeseen circumstances differing in all, and on casualties of various kinds, that it is very difficult to estimate them correctly, the price of one of approximating similitude sometimes being double, and more than that, of another; and hence it is that experienced mining engineers always approach this subject with doubt and diffidence. The cost of pits already sunk may, however, be taken as a guide, if that of a number of equal depths and diameters be taken, and the average cost of the whole be assumed as the data for the cost of one. Our correspondents would render an essential service were they to supply us with this information, derived from their own experience in sinking pits, or carefully-ascertained facts as to other shafts which have been made under the superintendence of their friends. Should there be, as is anticipated, a parliamentary committee this session, the information thus obtained would be valuable evidence. In the discussion of this subject it is obvious to even the most inexperienced mining engineer that there has been gross exaggeration, and a manifest disinclination to tell "the whole truth." The colouring which has been given to facts has distorted them, and the subject has not been dealt with in an honest and straightforward manner. It is, however, generally admitted that a second pit will cost less than the first one, although what the first one cost is not to be mentioned, or even surmised. Apart from these considerations, however, we contend that this is not a money question,—that it is one of life or death to the miner, and that if certain collieries cannot be carried on remuneratively without ever and anon sacrificing the lives of hundreds of their workmen, let them be closed forthwith. It is repulsive to every human feeling, and shocking to every well-regulated mind, to listen to such an excuse for the sacrifice of hundreds of lives. Let such collieries be closed by all means, for we do not believe it would add 1d. to the cost of our fuel, whilst it would save us from the repetition of such horrible catastrophes as that which has just occurred in the New Hartley Colliery.

That the whole of the Inspectors have done their utmost to diminish the loss of life in collieries, is acknowledged even by those most opposed to the Inspection system; and we trust that, now experience has shown that where the Inspectors can order preventive measures the annual loss of life gradually decreases, whilst in those classes of accidents over which they have no direct control the number of deaths remains unsatisfactory, greater power will be placed in their hands. At present the Inspectors are in a very unenviable position. It is too generally expected that the result of their labours should be to prevent unnecessary sacrifice of life; yet they have not the power to order the discontinuance even of the most dangerous systems of working. We last week referred to the dispute between the miners of Gosforth and Mr. DUNN, and offered a justification for the part the Inspector took in the matter, though we did not for a moment doubt the propriety of the men's application to him: our remarks have been fully confirmed by subsequent events. In the beginning of the following week Mr. COULSON was sent for, and, with the united pressure of the men and their view, inserted a series of holes in the cement tabbing, all of which ran water, and tended to diminish the original feeder, all corroborating the view originally expressed by the Government Inspector, that the water belonged to the grand receptacle. On the Tuesday night, upon a consultation, the viewers came to the conclusion that of necessity an addition to the height of the tabbing must at once be determined upon; but during the Wednesday the principal bucket of the engine ceased to draw, and the water that was going down the shaft rendered it impossible to work at it; whilst, simultaneously, one of the water-tube working by the slides of the pit got out of gear under water, during which serious events the water in the pit rose so alarmingly as to necessitate the extrication of the horses and ponies; which operation was determined upon, and was accomplished about midnight. Since then scarcely any pumping has taken place, and the colliery will be suspended for some weeks, whilst the above operations are carrying out; the men, however, are fully employed in the other collieries belonging to the same company. We subjoin a comparative statement of the separate accidents and deaths resulting in Mr. DUNN's district during the past two years:—

	1860.	1861.	Increase.	Decrease.
From explosions	2	7	5	—
Falls of roof and coal	24	24	—	—
Shaft accidents	11	13	2	—
Miscellaneous and on surface ..	31	37	6	—
Total	68	81	13	—

The return of casualties in the district of the Southern Division of Durham is also, on the whole, satisfactory, for although there has been an increase in the number of separate accidents (owing to the increase both underground and at surface of those classed as miscellaneous), the number of deaths resulting shows a diminution; and what is still more satisfactory is that, with the single exception of a shaft accident which caused the death of two persons, each accident has resulted in the loss of one life only. The separate accidents and deaths resulting therefrom during the past two years have been:—

	1860.	1861.	Increase.	Decrease.
From explosions	4	26	22	—
Falls of roof and coal	30	30	—	—
Shaft accidents	10	10	—	—
Miscellaneous and aboveground ..	23	23	—	—
Total	67	89	22	—

In the West Lancashire and South Wales (Mr. HIGSON'S) district there have been two large explosions during the past year—that at the South Mostyn Colliery, where 10 persons lost their lives, and that at the Shevington Pit, where the number of deaths was 13—the consequence being that the return shows a considerable increase. With these exceptions the return is not unsatisfactory, when compared with that of the preceding year, as will be seen from the following table:—

	1860.	1861.	Increase.	Decrease.
From explosions	7	29	22	—
Falls of roof and coal	38	38	—	—
Shaft accidents	18	18	—	—
Miscellaneous and aboveground ..	10	13	3	—
Total	73	98	25	—

The return from the South Staffordshire and Worcestershire (Mr. J. P. BAKER'S) district will, we believe, also be satisfactory, though for the precise numbers we must wait for the official publication of the reports. The subjoined figures will approximate very nearly to truth. Comparing these figures with former periods, we find that there has been a decrease of 16 in the separate accidents, and of 10 in the deaths, upon the previous year. The average loss of life for the first five years during which the inspection system was in operation was 178 per annum, and for the five years ending 1860 this had been decreased to 147. In the year ending 1861 the number of deaths has been further reduced to 134, a result which cannot but be regarded as encouraging. The numbers for the past two years are:—

	1860.	1861.	Increase.	Decrease.
From explosions	3	15	12	—
Falls of roof and coal	69	75	6	—
Shaft accidents	40	44	4	—
Miscellaneous and aboveground ..	10	11	1	—
Total	132	145	13	—

In the West of Scotland (Mr. ALEXANDER'S) district, the diminution

a.—Number of separate accidents. b.—Number of deaths resulting therefrom.

both in separate accidents and in deaths resulting has been considerable with the single exception of falls of roof and coal, which class of accidents remains about stationary. With the exception of one miscellaneous accident, which caused the death of two persons, no accident (whether explosion, fall, or in shaft) in Mr. ALEXANDER'S district has resulted in more than a single death. The subjoined is the comparative statement of the separate accidents and deaths resulting during the past two years:—

	1860.	1861.	Increase.	Decrease.
From explosions	6	11	5	—
Falls of roof and coal	21	22	1	—
Shaft accidents	14	15	1	—
Miscellaneous and aboveground ..	5	9	4	—
Total	46	57	11	—

Were further evidence required as to the necessity for investing the Inspectors with fuller powers it could be readily given, either by referring to the recent accident at Cleator Moor, or to that at Monkwearmouth. The Cleator Moor Colliery is another of those in which the workings are carried on by a single bratticed-pit, and the deaths which were the subject of the inquest on Wednesday may certainly be described, to say the least, as having resulted from great imprudence. A drift was set away out of the back shaft into the coal 4 feet square, but without brattice: when 20 yards from the shaft a shot fired the gas, and a desperate explosion took place, blowing one of the poor fellows through the 3-inch deal brattice: both were, of course, killed on the spot. With reference to the Monkwearmouth casualty, it is remarked that there are even now pits in which the lives of 200 or 300 people are jeopardised, and in which, unless some immediate steps be taken, accidents may occur not less alarming than that at Hartley; and it is probable that should such an event unfortunately happen, an attempt will again be made to throw the blame upon the Inspector. Take, for example, the Walker Pit, happily the only one on the north bank of the Tyne where the High Main and Metal seams' water is dammed up by cast-iron tabbing. The water thus kept back has mixed, it is said, with the pyrites in the mine, and is of a highly corrosive character. This influence is at work, eating silently, but surely, into the iron, which is thus rendered daily less able to resist the pressure of upwards of 100 fathoms of water. The miners are at work at lower seams than those just named, and should the tabbing give way every soul would perish, for the waters would rush in with the velocity of a cataract, against which nothing could stand. These upper seam waters form, perhaps, the greatest difficulty which many of the collieries in the Newcastle district have to contend against; but it is hoped that now the inundation of Monkwearmouth and Gosforth has caused renewed attention to be directed to the subject, the necessity for a general and mutual system of drainage, such as was proposed by the late Mr. T. J. TAYLOR, will be better recognised, and that a bill will speedily be brought in for giving the requisite powers.

An anxious endeavour of recent legislation has been to encourage, as much as possible, the winding-up of expiring joint-stock companies in the Court of Bankruptcy rather than in the Court of Chancery, the delay and costs of proceedings in the latter court having caused it to be justly dreaded. The Legislature has not, however, been successful, for while it took care to give jurisdiction to Bankruptcy, it neglected to take it away from Chancery; and, therefore, Chancery, mindful of its own, and jealous of its privileges, still claims and still exercises the right to wind-up any joint-stock company the critical state of which renders such a course desirable.

This question of jurisdiction has been considered in the case of *LOWNDERS v. the Garnett, &c., Gold Mining Company (Limited)*, heard before Sir W. P. Wood, V.C., during the present week. The facts were these:—The plaintiff filed his bill against the company, praying a declaration that certain debts were valid, and subsisting debts due from the company to him, the plaintiff, and also an injunction to restrain the company as well from paying any other debts in preference to the plaintiff's, as from completing a voluntary winding-up of the company without paying or providing for the debts due to the plaintiff; and also, if necessary, that such winding-up might be continued subject to the direction of the Court of Chancery. To this bill the defendants filed a plea, which alleged that as the defendants' company had been registered in this country with limited liability, the jurisdiction to deal with the case belonged, under the recent Joint-stock Companies Acts, to Bankruptcy and not to Chancery. The point was ably argued for the defendants, but the learned Vice-Chancellor (Sir WILLIAM PAGE WOOD) disallowed the plea, with costs, and in giving judgment, observed that the circumstance that another tribunal had been provided by the Legislature afforded no ground for holding that the Court of Chancery must shut its doors upon a claim which was not illegal. The very fact that voluntary liquidation had been adopted to wind-up the company, showed that neither the shareholders nor anyone else wished to resort to Bankruptcy. All that the plaintiff wanted was to have his debt paid, and to get the assistance of the Court of Chancery to restrain the assets from being disposed of under the voluntary winding-up, to his irreparable injury, without provision being made for his claim. It would be a very harsh construction to hold that a company must be driven into Bankruptcy simply because there was a disputed claim in existence. The company did not wish to go to Bankruptcy, nor did the plaintiff. He merely wanted to have his claim provided for under the voluntary winding-up, which he did not wish to stop further than that it should take place, if necessary, subject to the directions of the Court of Chancery. The plaintiff's title to relief was not inconsistent with a voluntary winding-up, and there was nothing to necessitate an application to Bankruptcy. The plea must, therefore, be disallowed.

We, however, trust that the present session of Parliament may not be allowed to pass without an attempt being made to provide a cheap, simple, and rapid means for the winding-up of joint-stock companies, the Court of Chancery being much too expensive and dilatory, and the Court of Bankruptcy, as at present constituted, not being, in our opinion, competent to deal with the abstruse points with which winding-up cases, unfortunately, abound.

The recent announcement of the YUDANAMUTANA COPPER MINING COMPANY OF SOUTH AUSTRALIA, and the anniversary meeting of the Australian Association, have brought the subject of our Australian productions prominently before the public. Indeed, it is very important to observe how readily occasion is taken by all classes to show the feeling which exists in the country for the general welfare and prosperity of the Australian colonies, and at the same time to give opportunity for the expression of reciprocity of sentiment by the representatives of these dependencies who may happen to be among us.

The annual gathering of the Australian Association, which took place at the London Tavern on Wednesday evening, was one of these events. It brought together a large number of colonists and of gentlemen of the mother country identified with Australia, either in their social connections or as having business intercourse therewith; and the meeting was not deficient in all that is usual to demonstrate the mutual desire to keep intact the existing interests.

On these festive occasions there is not, of course, the opportunity of giving substantial evidence that the declarations made are not merely rhetorical, but many events lately have shown they are not so, and a ready response is given where British capital and energy are required for the furtherance of any useful object in these colonies, and this remark particularly applies to mining enterprise. Several projects have been introduced requiring large capital, yet the amount desired has been promptly produced. The most recent instance is that of the Yudanamutana Copper Mining Company of South Australia, which was announced late in last week, and we explained in our last Journal, with a capital of 135,000l., yet nearly the entire amount has already been subscribed, and the banker's list announced to be closed on Tuesday. Surely this is good proof that our capitalists and others keep faith. It is true that the prospects of the Yudanamutana Company are most remarkable, for probably there is not another instance where so great a mass of copper ore is exposed to view, and where, consequently, certain and quick returns may be confidently calculated on; but at the same time the scene of action is far distant, and operations cannot be conducted under the personal control of those in London, but must be abrogated to gentlemen in the colony, thereby testifying as to the confidence reposed in the colonists, and that their representations as to the value of their mineral deposits are bona fide. We understand that most of the large shareholders in the Great Northern and other Australian mining companies have taken shares to a large amount in the Yudanamutana, which is further corroborative of the validity of the statements put forth in the prospectus.

The Duke of NEWCASTLE spoke at length at the meeting referred to, and gave some statistical information, which is interesting to recapitulate, late, as evidence of the extraordinary progress made by our Australian

colonies, which have "sprung up within 20 years, and the youngest was but three years old. They possess," continued the Duke—

A population of 1,250,000, a revenue of the comparatively enormous amount of 6,500,000*l.* They carried on an export trade which occupied 1,500,000 tons of shipping in the cargo of exports valued at 21,000,000*l.*, while the imports amounted to 25,000,000*l.*, which no less than 16,000,000*l.* came from the mother country. (Hear.) These facts approved the idea that colonisation was a lost art, and also proved that colonies were not a disadvantage even in the low pecuniary aspect of the question. Within the last ten years no less than 100,000,000*l.* worth of gold had been exported from Australia, and principally to this country. This remarkable operation had been conducted without the occurrence of those disastrous events which had been anticipated by some persons, during that very period of ten years the number of acres under cultivation in those colonies rose from 60,000 to 300,000, and the export of wool had increased in value from 10,000*l.* to 2,000,000*l.*

THE LONDON COAL MARKET.

Perhaps at no time in the history of the coal trade was the London market in a more thoroughly wretched and depressed condition than it has been this winter. Prices have been below zero week after week, and there is no prospect of improvement; indeed, the position of affairs seems to grow worse as the year grows older. The coalowners in the northern coal field are naturally beginning to grumble, and the possibility of providing a remedy for this unhealthy state of things is a question that presses for solution. A case is mentioned where only last week a manufacturing coal was disposed of at 10*s.* 3*d.* per ton. The freight upon the cargo would be at least 2*s.*, and the charges, including City dues, another 2*s.*, leaving 2*s.* 3*d.* per ton in the Tyne, equal to 5*s.* 11*d.* per chaldron, from which leading charges, whether by railway or in keels, must be deducted. It is pretty clear from this that London consignments must involve a considerable loss to the coalowners, and particularly so to the coalowners of the Tyne and Wear, who are farthest from the market, and, consequently, compelled to pay heavier charges for carriage than owners in the midland and southern districts. It is, important, therefore, to consider what are the causes of the depression, and what steps can be taken to in some degree remove it. One thing is tolerably certain—that the London market has been greatly overstocked this season. Mild weather has produced a decline in the consumption of household coal, while the universal depression of trade has led to a falling off in the demand for steam and manufacturing sorts. The supply has exceeded the demand throughout the winter, and factors, anxious to get the coal off their hands, have been obliged to accept almost any price that could be obtained; and yet, notwithstanding that the market returns week by week exhibited an increasingly downward tendency, and the factors' reports continually showed, as plainly as facts and figures can show a thing, that the market was glutted, the coalowners went on consigning as if prices were good, and the demand lively, with every prospect of increase. To such a course of benefiting the consumer at the expense of the producer there could be but one result—great and ruinous loss, scarcely balanced by profitable transactions in other quarters.

This, then, is the sole cause of the depression—an excess of supply when the demand is less than usual. Surely this is capable of receiving a speedy cure. Why should the coalowners take money out of their own purses, and out of the poorly-enough furnished pockets of their employees, and give to the inhabitants of London, who do not need, and will not thank them for, their liberality? It is a foolish and a suicidal act. Let them cease consigning for awhile, until the market be restored to a healthy tone—until there is a positive demand; and when that is done let there be some understanding that in future this system of reckless competition shall be avoided, and that the glutting of the market, season after season, shall cease. In the next place, a strong effort ought to be made to obtain either total or partial relief from those obnoxious imposts, the City dues, which must be paid to the uttermost farthing, no matter how bad the state the market may be. The extremely low price at which Londoners are able to obtain their coal compared with the inhabitants of many places in the northern counties ought to be sufficient, without their levying a heavy tax upon an article that is frequently vended to them at a loss to the coalowner, and perhaps only "three-quarter" pay to the pitmen, for whom they have expressed so much sympathy. Thirdly, the coalowners should endeavour to obtain a reduction of railway dues, which, though not exorbitant, are higher than they might be, and could be lowered without eventual loss to the various companies.

And arising out of this discussion of remedies for acknowledged evils comes the very important and but little ventilated question of factorage. We believe there is no other department of British commerce and industry in which agents are paid upon the quantity they sell, quite irrespective of price, and not by a percentage upon the amount of money they may be able to realise. An able correspondent of a northern paper has exposed the disadvantages of this system in very forcible language. He points out that as the natural result of such a system of payment it is financially of consequence to the factor whether the household coal that he sells fetches 10*s.* or 18*s.* per ton in the market or 20*s.* to 24*s.*; in either case he receives a factorage of so much—usually 4*d.* per ton—on the quantity sold. The fact that such an arrangement is shunned in all other commercial operations of a kindred nature is a proof of its defective character. The merchant who has produce to dispose of knows right well that the broker he employs to sell it will have his mercantile energies far more fully on the alert to realise a good price when the extent of his remuneration depends upon it than when it does not. And if the broker who sells a cargo of sugar is not allowed by the custom of the trade to levy his payment at the rate of so much per cwt. on the contents of that cargo, why, this writer, should the coal factor, who is only a coal broker, claim to be paid in Thames-street for his services a remuneration assessed on a scale which is prohibited to his commercial brother in Mining-lane? In short, is the coal factor paid on quantity when all other mercantile agents are paid on amount? The writer then proceeds to expose the system in figures, and he supposes that some of the large owners in the northern district annually send at least 200,000 tons of the best coals to the London market. On this quantity, factorage, at 4*d.* per ton, amounts to 333*s.* 6*s.* 8*d.*; but the regular brokerage charge of 1 per cent., if sold at 18*s.* per ton, would yield only 1800*l.*, leaving a difference against the owner of 1533*s.* 6*s.* 8*d.*. It may be objected that the brokerage of 1 per cent. on such an article as coal, so bulky in proportion to value, is low, and that 4*d.* per ton factorage covers a *del credere* commission. The writer above referred to replies to this demurrer, by asserting that the 1 per cent. is an accustomed rate of brokerage on the sale of goods requiring a vast deal more of care, trouble, and expense to the broker than coal, that the coal factor has an additional remuneration not accruing to produce broker in transacting the business of the ships that convey his commodity to market. Not less than 500 sail would be required to convey above-named quantity of coal to market, and how much less than 700*l.* annum would the agency of such a fleet be worth? Clearly there is something wrong in a system which admits of such an exposure as is here made, and the sooner it is amended the better for all parties concerned. We enumerated four things which the coalowners should do to rescue the coal trade from its present miserable condition—They should establish a system of regulating consignments, seek a reduction, if not the abolition, of City dues, endeavour to get the railway charges lowered, and work on the factorage system. We recommend these points to the consideration of the Coal Trade Association and its various subdivisions, and that the London market will never be restored to a healthy condition at least the first and last be carried out. We shall be glad to hear what some of our well-informed correspondents have to say on the subject we have thus briefly discussed, and upon which very little has yet been said.

AUSTRALIAN COAL.—Upon several previous occasions we have referred to the excellent quality of the New South Wales coal, and the advantages which would accrue from its general use for steam purposes in the southern hemisphere; yet, owing probably to the coal requiring a somewhat difficult construction of furnace, and a different mode of firing, its use has been less general in vessels belonging to European companies than has been hoped. The subject is now being again brought prominently forward by Mr. Daniel Cooper, whose long connection with the Australian colonies enables him to speak with authority concerning the application of the coal. He states, upon the authority of Mr. G. H. G. the Government examiner of coal mines, that the present application of the collieries in work are equal to the production and shipment of 100 tons weekly, which quantity can be readily increased, so as to keep pace with any extent of demand. The two principal coal fields at present worked are those of Newcastle and Maitland, 60 miles north of Sydney; and of Illawarra, 40 miles south of Sydney, and during 1860 were raised from the former 336,083 tons, and from the latter 100,000 tons. In addition to these, there is a small field just opened at Port Jackson, 80 miles inland on the southern road, and another at Hartley, 100 miles inland, on the western road, which raises the aggregate yield for

the year to 368,862 tons. During the same period 233,877 tons were exported, and from the indications in various other parts of New South Wales, as well as in Queensland, no doubt is entertained that the development of the Australian coal trade will rapidly progress.

ECONOMIC GENERATION OF STEAM.

Improvements in the application of steam-power, and in the generation of steam, are so frequently introduced that unless some radical change is proposed we are apt to regard this class of invention as comparatively unimportant, upon the consideration that the adoption of many such inventions will be necessary to produce any appreciable alteration of economy; and from the universality of this feeling the advantages derivable from really valuable discoveries are but too often lost to the public. In the *Mining Journal* of May 11, 1861, we described a new steam regenerating apparatus, by the use of which the exhaust steam was returned to the boiler instead of being suffered to escape into the atmosphere, as is usual, the result being that, in addition to considerable economy, great regularity of working and additional safety are likewise secured. The apparatus has now been practically tested on a large scale, the results actually obtained being even more satisfactory than those originally anticipated.

The invention originated with Mr. Imray, an English engineer, and Mr. Pigua, an Italian engineer, the practical details being perfected by Mr. Datchy, a French mechanician of long experience. The apparatus is applicable to all kinds of boilers, and can be so easily adapted to them that the stoppage of the engine is scarcely requisite; it consists of a surface condenser, in which the steam, after having performed its duty in the cylinder, is just condensed, and thence forced back by a small auxiliary pump into the boiler, passing first into a supplementary tube within the boiler flue. The advantage of this arrangement will be apparent; the exhaust side of the piston being always in direct communication with the condenser, in which an almost perfect vacuum always exists, the effective force of the fresh steam upon the piston is, of course, increased. But this is not all; the deposit of incrustation in the boiler is entirely prevented, as the same water, constantly distilled and re-distilled, is used over and over again, the sole additional supply requisite being that to compensate for the unavoidable leakage at joints, packings, and valves; and so small is this quantity, that whilst the feed-water usually exceeds 25 gallons daily per horse-power, less than one quart daily suffices when the regenerating apparatus is employed.

The regenerator has been for some time in successful operation at several factories in Paris, and is now in constant use at Collinge's axle-factory, Westminster-bridge-road, where the results obtained, as stated by the principal of that firm, fully bear out those promised by the inventors. The engine employed at Messrs. Collinge's is a high-pressure engine of 12-horse power, and not only is increased regularity in the working of the engine secured by the apparatus, but it was shown by actual experiment, before a large number of scientific gentlemen, that whilst only 32 strokes per minute were obtained when the steam was supplied in the ordinary way, upon applying the regenerator 50 strokes per minute were at once made, under precisely similar conditions. The economy in favour of the generator is upwards of 42 per cent.; and, with regard to the consumption of fuel, it has been found that the same amount of power can invariably be obtained with 17 cwt. of fuel when the regenerator is used as with 37 cwt. without it.

We understand that the patentees intend forming a company for manufacturing the apparatus, and furnishing it to the users of steam-power for half the profits produced by them during the continuance of the patents. The saving is estimated at 5*l.* per horse-power per annum, so that manufacturers will be but too glad to have the apparatus applied to their boilers.

MINING AND METALLURGICAL GOSSIP.

[FROM A CORRESPONDENT.]

Under this head we purpose discussing, from week to week, the various current topics of general interest connected with mining affairs, either in London or in the provinces. In common with almost every other, the British Mining interests are at present suffering severely from the stagnation of industry and trade, caused by the American war; and until this, somehow or other, brought to a termination it seems hopeless to expect any very serious improvement. Of all branches of mining industry perhaps the iron trade suffers the most. The coal trade is also seriously affected. Metallic mining—including tin, copper, and lead—shares in the prevailing depression, but in a minor degree. Compared with the high prices of these metals, and of spelter, which have obtained for the last few years, the fall to present prices is, undoubtedly, a heavy drawback to investors; but compared with the average prices of a number of years the present rates of the metals named (except zinc) are above the average, and, consequently, cannot reasonably be complained of. It is doubtful, therefore, whether the prevailing dullness which most undoubtedly marked the present condition of the financial aspects of metallic mining is due so much to the depression in the metal market as some are apt to think. The disposition of the public to speculate and invest in mining enterprise has been infinitely more active than it is at present, at times when metals were much lower. The truth is that the public, at the moment, seems to have little zest for mining speculation. To whatever cause we may attribute this fact, it is one which is not to be denied. Mining is, and has been for some time, carried on chiefly by those who have been in it for some time: fresh capitalists—new blood—which are so necessary to give buoyancy and vigour to a pursuit like mining, have of late been but few and far between.

But although in ordinary mining circles enterprise languishes for want of public aid, there has been, within a few months, a more than average abundant supply of public mining companies. Most of them have, doubtless, been foreign or colonial schemes; and such enterprises being generally supported by a superior class of capitalists, they have, probably, in a majority of instances been successfully floated. By the way, is not this partiality for mining in distant lands in preference to our own country, which is so characteristic of our leading City men, rather remarkable, if not unaccountable? Men of high mercantile standing will readily join in a scheme to work mines in any distant part of the world who would shudder at the idea of being connected with a similar enterprise in their own country. When supported by this class, which has often been lately the case, of course foreign or colonial enterprises have found a ready reception on the Stock Exchange and among the investing public, principally on the faith of the names connected with them. In the case of home concerns, brought forward usually without these potent auxiliaries, we fear the result of the appeal to the public has not generally been successful, and that they have been only received with apathy. One great exception to this is the Mwyndy Iron Ore Company; but then the direction of this company included the powerful names of Mr. J. Taylor, jun., and S. Gurney, M.P.

Amongst the Cardigan mines, we may mention the Cardiganshire Consols Company, one of the most important enterprises of the day in that county, recently brought out, reconstituted by Mr. Murehison. That these great historical mines should be properly reworked, with adequate capital, is of immense importance to the Cardiganshire district, for under such conditions they can scarcely fail of success. The history of the former working of these mines, at the commencement of the eighteenth century, is given in the paper of Mr. R. Hunt, F.R.S., in the "Memoirs of the Geological Survey," vol. ii., part 2. At that time the Duke of Leeds was Governor of the company which worked them, which likewise included as shareholders many of the foremost names in the kingdom among the nobility and great capitalists. The great success of the Cobden and Bright party, who worked the neighbouring mine of Dyliffe, is the best proof of the capabilities of the district when opened out efficiently.

In Cornish mines matters are progressing much as usual. The "bulls" and "bears" are fighting their usual battles over East Carn Brea. Our sympathies must always be against the latter, even when, as is sometimes the case, they have some small grounds for the superstructure of depreciation, which they manage so ingeniously to build up upon the smallest basis.

Within the past week two important mine meetings have been held in Cornwall—important we mean to London people, where the shares are chiefly held—those of Wheal Trelawny and Wheal Grylls. The successful position of both these mines must be a matter of congratulation to their respective shareholders and promoters, and add further to the prestige for success gained by Mr. Dunsford's office.

During the coming week the meeting of Prosper United will be held in London, at Mr. Marchison's office. The manager, Capt. Thos. Richards, and other local persons, will be present, so that the shareholders will have the fullest opportunity of satisfying themselves of the position of their property, by personal enquiry from those most capable of affording them information.

That mining is dull and heavy at present should be no discouragement. We have all seen such times before; and we have seen that those who have

had the courage to meet them, and to hold through them, have been those who have succeeded in making substantial fortunes. The tendency of the public is, unfortunately, too much the other way. When things are prosperous—even unduly inflated—they rush in with the most sanguine expectations, and when the reaction comes, which must follow undue inflation in any business, they rush out disgusted. Those who know mining better—who have seen one or two of these ups-and-downs—are aware that this is the time to go in. At the present moment there are a series of concerns selling for a tithe of their intrinsic value, out of which fine fortunes will be made by those who have the courage to invest when speculation is at its ebb, and realise when it has its flow, which is certain to arrive in due time.

REPORT FROM NORTHUMBERLAND AND DURHAM.

FEB. 13.—The Coal Trade continues very dull—the mild winter causing great depression, quite unusual at this season of the year. From the report of the Coal Trade, however, read at the late general meeting, prospects appear to be good: the results for the year 1861 were, on the whole, satisfactory, the prices having been 4*d.* per ton less than for the preceding year, while the rate of freight was exactly the same. The average prices having been for first and second class respectively 19*s.* 5*d.* and 17*s.* 2*d.* per ton, the rate of freight upon the average of the year being 6*s.* 10*d.* Neither do the prices to the coast during 1861 exhibit any want of buoyancy of demand, they have, on the contrary, been remarkably steady. It appears that the coals imported into London by railway are gradually increasing in a greater ratio than those by sea. The importation by sea from this district barely showed an increase over 1860, the total addition being only 8384 tons, whilst the increase in 1861 upon coals by railway is no less than 164,957 tons. Of this increase about 63,000 tons are, however, upon coals from the county of Durham; the rest is upon Welsh and inland coals. As a whole, the returns afford a cheering prospect: the augmented shipments in every branch have not been bought by any undue or unnatural depression of prices; those to the coast especially ought to be satisfactory to all concerned. The manifestly flourishing state of the general export trade would seem to augur a similar condition of the steam coal trade of this district, of which export forms so large a portion. This, however, is not exactly the case: active as the demand has been, the large additions recently made to the quantities of this coal available for the market have sensibly affected that market. The net prices obtained for this coal are below that obtained for second house coal when sold for coast demand at the port of shipment. And when the growing demand for this coal is considered, and the certainty that no further considerable addition to coal of this quality is likely for a long time to be made, if at all, it appears that a very moderate exercise of prudence on the part of the owners of steam collieries would most certainly and immediately improve the position of this branch of the trade. In the gas and coking coal trade there is a growing demand. On the subject of the Industrial Exhibition, the committee stated that they have agreed with Mr. W. Oliver and Mr. Stephen Dinning to refit and bring up to the present date the Map of the Coal Field in their possession, and also to execute sections of the strata of the coal field. The foreign exports from Newcastle during Jan. were 108,262 tons, against 79,853 tons in Jan., 1861—Sunderland 48,191 tons, against 36,066 tons; the Hartlepool 26,496, against 26,682 tons; Blyth 4894 tons, against 9948 tons; Shields 2023 tons, against 6294 tons; Amble 3454 tons, against 5931 tons; Middlesbrough 3134 tons, against 1557 tons.

The accident at Hartley has alarmed all parties concerned, and rumours are afloat of new shafts to be sunk in various places. For this a great necessity exists, and much benefit in every respect may be expected to be derived. A delegate meeting of miners was held in Newcastle on Saturday, when the matter was discussed. On the subject of two shafts the greatest unanimity prevailed, but great difference of opinion appeared to exist as to the position of those shafts. However, the principle that two shafts are necessary in all cases, and also additional shafts in proportion to the area of coal to be worked, appears to be a safe one, and the one most likely to be generally approved of. The Chairman (Mr. W. Grieves) said he was much pleased with the decision the jury came to—that they considered it necessary in future that two shafts should be sunk in every colliery, and also that malleable iron beams ought to be substituted for those of cast-iron. Now, it was for that meeting not only to take into consideration the two-shaft system, but also that of the ventilation of the various collieries at the present time. There were often 100 men, sometimes 20, and down as low as one, cut off at a time from defective ventilation. They must also consider the many who suffered in their health, and were brought to a premature grave from neglect in ventilation, from stythe, and bad air. On the motion of Mr. John Robinson, seconded by Mr. R. Fynes, the petition (which appeared in last week's *Journal*) was adopted to both Houses of Parliament. The Gosforth Colliery has stopped working until metal tubing is inserted to keep back the water, under the direction of Mr. Coulson; the workmen of the colliery being employed at the many collieries belonging to the same company.

On Sunday night a serious, and for a time alarming, accident, occurred at Monkwearmouth Colliery, Sunderland, by which 800 men were thrown out of work. The metal tubing with which the shaft is lined gave way in the upcast shaft, about 30 fathoms from the surface. The water rushed down at the rate of about 300 gallons per minute, nearly extinguishing the furnace situated in the Maudlin seam, about 40 fathoms from the bottom of the shaft, and reversing the air current. The horses and ponies, to the number of 66, were at once drawn up the pit, and a dam inserted at the bottom of the shaft, to hinder the water from flowing into the workings. Each segment of the tubing has a hole in the centre, which is plugged up; 26 of which were drawn to lower the water below the broken segment, so that new ones might be inserted. The water continues to flow down the shaft apparently as fast as ever. There is no pumping-engine attached to the mine, the water having been drawn by iron tubs, which hold 600 gallons each.

At the meeting of the Northern Institute of Mining Engineers, on Thursday, there was, strange as it may appear, a thin attendance. Several new members, however, were elected. The principal business of the meeting was the paper of the President, Mr. Nicholas Wood: this was highly interesting and instructive, and was illustrated by a large number of plans and diagrams. It will prove very useful, especially in reference to the upper coal measures, which are, as yet, only partially developed.

At Portrack, Stockton, some new rolling-mills have commenced operations—a very reasonable incident at the present time.

The *Northern Express* made a serious blunder a few days ago, by copying part of a notice respecting the Consett Ironworks from this letter, and has charged the *Mining Journal* with the serious error. Had they given the whole of the notice no error would have been committed.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

FEB. 13.—The Iron Trade both in North and South Staffordshire, and the Hardware Trade of the latter district generally, remain as they were. With regard to the former, especially, the demand is very dull, and the orders in hand are, probably, as few as they have been during the whole of the protracted period of depression. Merchants from the Confederate States have been in the district recently, making enquiries with a view to establish commercial relations so soon as the present war shall be over, which they appear not for a moment to doubt must soon end in the acknowledged triumph of their independence. A blast-furnace has been blown in at Barber's-fields, near Bilston, by Messrs. Shale and Fowler, who purchased the furnaces and mines some months ago; and Mr. Thomas Rose has commenced to make finished iron at the Millfield Ironworks, which have been standing since 1857. These are by no means, however, to be taken as indications of an improvement in trade, as they are only the result of purchases recently made. The Coal Trade of South Staffordshire is getting quiet, as the domestic demand is diminished, and the ironworks are consuming much less than the average quantity.

The return made of the number of fatal accidents in coal mines for the last ten years, in relation to the coal raised, presents results which are in one respect highly favourable to South Staffordshire. In regard to the proportion of deaths to the coal raised, so far as the statistics with respect to the quantity of coal enable comparison to be instituted, the district occupies a most, or rather the most, unfavourable position; North Staffordshire, Shropshire, and Cheshire coming next in order of fatality in proportion to the tons of coal raised. Whether the estimates of coal won are correct is a question; many who are competent to form an opinion are inclined to place the yield of South Staffordshire and Worcestershire considerably higher than it is estimated at in those returns; this, however, if it be really so, may equally apply to other districts, in which case the greater proportioned loss of life in South Staffordshire would remain un-

altered. Much of the excessive loss of life in South Staffordshire is, no doubt, due to the dislocation of the strata, the extent to which present operations are being conducted in pits worked for the second time, the great number of shafts, and especially to the working of the thick coal; but there will still remain a considerable number of deaths in excess, which can be accounted for only by the deficiency in the winding apparatus, the modes of working, and to the general prevalence of the system of working the mines by contract.

The one favourable aspect in which these returns present South Staffordshire is in the steady and continuous diminution of deaths since the first Act for the Inspection of Coal Mines was passed. For the first five years of the period, commencing with 1851, the average of deaths annually was 178, for the second five years, ending with 1860, the average had fallen to less than 147, and of these the greatest number occurred in the year when a slight interruption in the maintenance of the inspection took place. It is understood that the deaths last year were less than in the preceding one, and under the average of the previous six years, showing a continuous decline. This result is the more satisfactory when it is remembered that by two accidents, of an exceptional and peculiar character, in 1861, 13 lives were lost. It is worthy of remark that the return is anything but creditable to the department of the Home Office from which it proceeds. Each Inspector appears to have sent his return in the form which appeared best to his individual judgment, the natural result of which is considerable variety in their form, whilst the general summary is of the most meagre character.

Efforts are being made in North Staffordshire to secure by legislative enactment a longer period of attendance at schools on the part of the children now admitted at a very early age to the earthenware manufactories. The movers in this matter appear to contemplate, as the most practical means of effecting the object, a provision in regard to children employed in manufactories similar to that embodied in the recent Coal Mines Inspection Act in reference to collieries—that no child shall be employed under 10 years of age, nor any between 10 and 12 without a satisfactory proof of their possession of the rudiments of education, or attending school for a certain period weekly between those ages. When this provision was introduced into the bill of 1860 for the inspection of mines, it was objected by the colliery owners that its effect would be to divert youths from employment in mines, and to lead them to seek it at manufactories, and so would reduce the natural supply of labour for mining pursuits. They stated that the trouble involved in obtaining certificates would cause boys under twelve years of age not to be employed at all in mines. So far, this latter prediction has proved true, for scarcely any of the employers keep boys in mines under the condition imposed for those between 10 and 12 years of age, and no doubt many seek work elsewhere; if, however, a similar provision were made in other trades this would not take place. The main difficulty in applying the provision to works is, that in order to carry out such a requirement inspection would be necessary.

A boy was killed a few days ago in a very dreadful manner, by being drawn into a cog-wheel at the Oster Bed Ironworks, Wolverhampton. He was employed to assist at the cold rolls, at which tin-plates are rolled and worked, very near a cog-wheel, into which he was drawn, it is supposed, by a piece of timber which he was dragging along being caught, and forcing him upon the wheel. There was a guard placed, but it only 30 in. high, and the piece of timber destroyed it. The result of the accident was the erection of a higher guard, although it was not deemed sufficient by some of the witnesses.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

FEB. 13.—Notwithstanding the universally depressed condition of trade, there have been additional supplies of orders for iron; but there is an entire absence of anything approaching activity both at home and abroad. Political matters have hitherto caused much uneasiness and uncertainty on the Continent; but now things are more settled, and a more healthful commercial feeling appears to prevail. The demand for bars and plates is improved, and we have more enquiries for railway-springs for our home lines. For the better class of manufactured iron an increased number of orders are in the market, whilst inferior descriptions are almost unsaleable. There is an improvement to notice in the Steel Trade, and in the manufacturers of Sheffield generally. Files and edge tools are in greater demand, and orders are being received more freely from the Southern States of America. Spain has ordered a large number of railway-wagons and tools for the construction of railway works for that country. The depression in the Iron Trade has led many masters to contemplate a reduction of 10 per cent. in the wages paid to the men; and we learn that several Derbyshire firms have given notice of a reduction, which is not unlikely to lead to a general strike.

The Coal Trade is excessively flat, and at some collieries very large stocks have accumulated on the banks for the want of a market. The dullness has been so great that in numerous instances the men have only been working partial time. Indeed we do not remember a period when the coal and iron trades have suffered so severely from long and protracted depression. The report of the Midland Railway has just been issued, and from it we learn that a dividend of 7 per cent. is declared, and that whilst every other description of traffic has decreased, there has been an increase in the traffic of minerals of 7045. The Rowley and Buxton is expected to be open to Bakewell in July next, and the Erewash Valley Extension will be ready on the 1st of March. The line was inspected by the Government Inspector on Tuesday last, and great exertions are being made to complete the stations and signals by that period. The cost of the new railway from Rowley to Buxton is estimated at 360,000*l.*, and 100,000*l.* is required for additional works.

The late Mr. Wyatt, of Farlow, a gentleman of considerable property, and deeply engaged in lead mining, left the bulk of his property to his cousin, Mr. Benj. Bagshaw, who had managed his farm for him. Amongst his property was a large quantity of slags, which laid near Mr. Wyatt's smelting-works in Middleton Dale, estimated at 20,000 tons, and which might some time have been bought for a few hundred pounds. The slag value has so increased that they have been sold to Mr. J. Fairbairn, of Sheffield, at 15*s.* per ton. On Wednesday that gentleman received tenders at Calver South for the erection of two smelting-furnaces, the work being let to Mr. Goodwin, of Tideswell Moor.

The North Derbyshire Banking Company held their half-yearly meeting on Monday, and declared a dividend of 10 per cent.

The Mill Dam Mining Company have had another sale of ore, the produce of six weeks, which has, we are informed, produced a profit of 240*l.* The action at law is not yet ended, but we are prepared to hear of a settlement shortly. The directors of the North Derbyshire are making steps to recover the arrears of calls, and the body may confidently anticipate that they will receive no further support from the shareholders unless they see that the arrears are duly paid. In the local share market, several transactions have taken place in Mill Dam and Prince of Wales, holders of the latter stock have realised in consequence the handsome premium which is being paid for these shares. We hear that the machine for crushing the quartz is nearly completed. There are numerous enquiries for Wagon shares, but none to be had.

REPORT FROM MONMOUTH AND SOUTH WALES.

FEB. 13.—On Jan. 30, a steam-boiler explosion took place at the Dowlais Ironworks, as previously reported in the Journal, and the fireman was seriously injured. The unfortunate man died from the effects of the scalding, and an inquest was held touching his death at the Dowlais Inn, before Mr. Overton, the coroner. The first witness examined was William Powell, who said he was the engineer at the big mill attached to the Dowlais old works, and the deceased, John Connell, was a fireman under him. His work was to attend to the three boilers which worked the engine. On Thursday, Jan. 30, they were at work as usual, when one of the boilers exploded. He had tried the taps a few minutes before, and found a sufficient quantity of water. He did not try the float. There was no water-gauge attached to the boilers. The middle boiler exploded, and by the force of the explosion the boiler was lifted up from its bed, and the steam-pipe broke. The steam and water gushed out, and went over the deceased. He had been engaged at the old works for ten years, and the same boilers were now used as when he came first. There had been a leak in the boiler which exploded, and it had been repaired. The leak was not near the part that had given way. Lewis Richards, the superintending engineer, said the boiler was about 30 feet long, 7 feet diameter in the shell, and a 4-foot tube. The boilers were generally worked at 35 lbs. pressure to the square inch, the pressure being regulated by the common safety-valve, with lever and weight—a separate one being provided for each boiler, and one for the united pipes. It was his duty to see that the safety-valves were in working order, and he examined them nearly every day. There was an alarm-whistle attached to this boiler, but they depended on the gauge-cocks. One boiler is let out every week, in order that the boiler-maker may examine it, and repair it if necessary. He did not know how old the boiler was. The explosion took place in one of the plates of the under part of the shell to the extent of 20 in. in length, and 10 in. in width at one end, and 2 in. at the other. The thickness of the part that fractured was not more than the eighth of an inch in some places. The tube was not injured, which was a proof of a sufficient quantity of water being in the boiler. He believed the explosion took place in consequence of the thinness of the plate, which had been completely worn out. John Rosewain said he had been at Dowlais for 21 years. This boiler had been put up some three or four years before he came. It had been repaired on several occasions. In 1853 he put a new top to it, and in 1857 a new tube. He believed the explosion took place from the corrosion between the boiler and the bricks, which made the plate so thin. The coroner having tacitly summed up the evidence, the jury returned the following verdict:—"We find that John Connell came to his death from the accidental explosion of a boiler at the Dowlais old works, and we recommend that more care should be taken in examining the boilers, and certain fixed rules should be laid down for that purpose."

On the 3d inst. an inquest was held at Smithing, Devil's Bridge, Cardiganshire, on the body of William Davies, who was killed in the Fronchog Mine. The deceased was following his usual employment underground, when a large fall came upon him, and he was killed on the spot. The jury returned a verdict of "Accidental Death."—An accident occurred at the Port Herbert Colliery, Neath Abbey, on Monday, by which a man, named Thomas Lovett, received a fracture of the leg, and was otherwise seriously injured.—On Saturday an explosion of gas took place at the Gellynwyd Pit, Pontypridd, the property of Messrs. Fowler Brothers. It appears that the proprietors use every precaution, and spare no expense, for the prevention of accidents; but the men, as is too often the case, do not second the efforts of their masters. One of the rules strictly prohibits the use of naked candles in the workings; but on Saturday morning two men, named Mayberry and Jenkins, went into one of the old workings with a candle, which came in contact with the explosive gas, and an explosion followed. The two men were dreadfully burnt, and they were immediately removed to their homes. This is another instance of the unfortunate recklessness which is so prevalent amongst colliers.

The Penydarren Works are once more on the tapis, and it is reported that they are to be immediately started. Mr. D. Williams, the wealthy colliery owner, of Ynys-cynon, Aberdare, and some two or three other gentlemen, were named as the future proprietors of the works. Mr. Williams has, however, written to the local papers, stating that the report is entirely without foundation. A numerous signed requisition was sent on Monday to Mr. Forman, the proprietor of the works; another to Mr. G. T. Clarke, of Dowlais; and a third to Mr. H. A. Bruce, M.P., and one of the trustees of the Dowlais Works. The petition to Mr. Forman was to the effect that should any reasonable offer be made for the works he should take into consideration the fact that the rents in the neighbourhood of Penydarren did not cover ground rent and taxes, and there were a great number of houses vacant. The petition to Mr. Clark expresses a hope that he will sell coal at a low price if any parties should make an offer for the

works; and that to Mr. Bruce appeals to him, as trustee of the Dowlais Works and Member for the borough, to use all his influence to improve matters in the neighbourhood. The following vessels are among the arrivals at the port of Swansea:—Mary Ann Johnston, from Haasco, with 550 tons of copper regulus; Zehima, from Caldera, with 227 tons of silver ore, value 2370*l.*; 425 tons of copper regulus, and 40 tons of copper ore; Bolina, from Coquilmo, with 425 tons of copper regulus, and 80 tons of unwrought copper; in pigs; Antonio, from Hondekilp, with 140 tons of copper ore, for Henry Bath and Son.

FEARFUL MINING ACCIDENT NEAR HOLYWELL.—SIXTEEN LIVES LOST.—It is our melancholy duty again to chronicle a most frightful catastrophe, resulting in the deaths of sixteen unfortunate miners. The sad event took place at the Bryn Gwio Lead Mine, near Halkyn, Holywell, on the morning of Wednesday last, the 12th inst. From the particulars we have gleaned we learn that at between 9 and 10 o'clock in the morning the men, numbering 27, were at work in the mine, and without an instant's warning a mighty gush of water forced its way into the levels and workings of the mine, immediately inundating the whole, and rising up the shaft to the extent of 80 yards. In the lower level there were 17 men at work, one of whom only escaped, and the 16 remaining poor fellows were instantaneously engulfed in the raging torrents of a subterranean flood. The other men who were in the shaft were fortunately at work near the surface, and consequently escaped. At present the accident is enveloped in mystery, and it is impossible to state from what source the water came. It is melancholy to contemplate that the poor sufferers are still in their watery graves, and may remain there for some time, as it is not known how long it may take to clear the water out of the shaft: 11 of the sufferers were married men, and five unmarried, and the death roll is as follows:—Edward Jones, Foot-y-cra, married; Bennett Roberts, Llxwm, married; Wm. Pierce, Rhewl, married; Edward Jones, Rhewl-y-cae; Llewellyn Powell and Edward Powell, Rhewl, unmarried; John Jones, Foot; Richard Blackwell, Northop, married; George Brooks, Northop, unmarried; William Williams, Northop, unmarried; E. Goodwin, widower, leaving six orphans; Wm. Hoson, Cilcen, married; Joseph Roberts, Bryn Gwio, unmarried; John Jones, Cilcen, unmarried; Job Jones, Cilcen, married; and John Williams, Hendy; 40,000*l.* it is supposed, will be raised for the sufferers of the Hartley Colliery accident, which is exactly as much again as the sum that was required. What will be done with the surplus of 20,000*l.*? Cannot some means be adopted whereby a portion of it may be appropriated towards the relief of the mothers, wives, and children of the poor unfortunate Welsh miners? Is it too much for us to appeal to public sympathy on behalf of these poor Flintshiremen? We trust not. No; England's sympathy is unbounded, and we fondly hope that a portion of that which was bestowed on the families of the Newcastle colliers will be manifested towards those of the Flintshire miners.—*Flintshire Observer.*

MINING IN LOWER CANADA.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Hitherto no very important discoveries of the more precious metals have been made in this region, although we have good reasons for believing that available deposits may yet be brought to light. The ores of lead, zinc, and nickel, although of frequent occurrence, have not yet been found in sufficient quantity to be of economic importance. Iron ore of the richest quality abounds, but cannot, under present circumstances, be regarded as of much value in Canada. Chronic iron, however, which is found in abundance, and of excellent quality, in the townships of Bolton, Melbourne, and Ham, is of much value in the arts, and requires only to be introduced into the English markets to become an important article of commerce.

The copper ores of the eastern townships are by far the most important, and if judiciously and economically developed cannot fail to add greatly to the value of these lands. They are diffused over a very great tract of country, extending from the Province line, near the head of Lake Champlain, in a north-easterly direction, as far as Quebec, and occupying a breadth of 45 or 50 miles. They occur chiefly in beds subordinate to the stratification of the chloritic slates and associated limestones, which are tilted to a high angle, and the most valuable deposits are found where these strata appear to have been fissured or otherwise disturbed, and the openings subsequently filled with ore. In some cases, also, veins occur cutting the stratification at small angles, and these give promise of being permanently reliable mines. The ores are generally of an unusually rich character, and are found in such variety as, by their mixture, to give great facilities for smelting. Their mode of occurrence, and conditions generally, are such that no amount of experience acquired in other countries is of much avail in this—in so far, at least, as the discovery of good locations is concerned.

During the last two years, notwithstanding the general depression of business in Canada, much activity has prevailed in prosecuting the search for valuable minerals in the region in question, chiefly by individual enterprise, or by small companies. Surface explorations have been made over a very large tract of country, and in several instances actual mining operations have been commenced, although as yet, with the exception of Acton and Harvey Hill Mines, no very great progress has been made in the production of ore for the market. The results so far have amply justified the anticipations. Deposits of the sulphurets of copper, more or less promising, have been found to exist on upwards of 150 distinct lots in the various township. On nine or ten locations, at great distances apart, shafts have been sunk to a considerable depth, and in as many instances large sums have been expended in costeaning and trenching, and in almost all cases the deposits when traced in depth have been found rapidly to improve in all the qualities requisite for permanent and profitable mining; and we have at the present time many sets which appear only to await the application of a moderate capital to become permanently productive. In anticipation of the Great Exhibition in London this year, Sir William Logan, the provincial geologist, is now making an extensive collection of ores from the various locations, which will be accompanied by plans prepared by ourselves, showing the nature of the deposits and extent of the workings, and which cannot fail to attract the attention of English mining adventurers to this promising region.

During the last two years the progress of mining in Canada has been greatly retarded by the low price of copper, and by the disturbances in the United States, but the progress of events seems now to promise a more prosperous state of things, provided we steer clear of war with the States. The civil war, and especially the late suspension of specie payments there, must have the effect for a long time to come of greatly diminishing the production of copper in the United States, while the consumption will continue undiminished, and the prices consequently high. And as we observe, by late reports in your Journal, that the past two years have been singularly barren in new discoveries in England, while many of the older mines are becoming exhausted, the present seems to be a peculiarly favourable time for introducing our mines into notice. The eastern township mines are very well situated as regards transportation of the ores to market, being traversed by both branches of the Grand Trunk Railway, and in part by the Stanstead, Shefford, and Chambly Railway, and at no point very distant from water conveyance.

As regards the comparative advantages of mining in this country and in England, we have to remark that, although at present the wages of all such labour as is required in mining is nearly double, and the cost of transportation more than double what these are in the old country, yet these evils may be expected to cure themselves as soon as mining becomes an "institution" among us: the first by the immigration of Cornish hands, and the latter by the erection of smelting-furnaces near the mines, or at the nearest coal country in British North America—Nova Scotia. As an ample set-off to these present disadvantages, we may mention the greatly superior richness of our ores, their greater proximity to the surface, dispensing with much costly machinery for pumping, &c., and abundance of wood for timbering, &c.

The only copper mines in Lower Canada which have as yet produced much ore for the market are, as we have before remarked, the Acton and Harvey Hill Mines. At Acton the ore, in consequence apparently of complicated dislocations of the strata, occurs at the surface in a series of bunches of exceeding richness, which have now for the most part been extracted by open quarrying, but on tracing the ore in depth these bunches appear to be connected with regular veins, which afford promise of being permanently productive, although by a different and more satisfactory mode of working. In the absence of full official returns, it may be safely estimated that the Acton Mine has up to this date produced not less than 7500 tons of ore, averaging 14 per cent. produce, worth about \$400,000 at the mine, at a cost of about one-fourth that sum.

At the Harvey Hill Mine, in Leeds, the property of the English and Canadian Mining Company, the works have been prosecuted with much skill and vigour, under the able superintendence of Mr. Herbert Williams, and much credit is due to that company and their manager for the enterprise and perseverance they have displayed in opposition to many and formidable difficulties, and which we are happy to say seem at length to have been crowned with merited success. (See reports in *Mining Journal* for Nov. 9 and Dec. 14, 1861.) The ore here occurs both in veins cutting the stratification and in beds or bands coinciding therewith, and is attacked and extracted by regular and systematic underground operations, which have proved that in that district of country at all events mining is no mere speculation. In opening up this mine from \$80,000 to \$100,000 have been expended, and during the past year it has produced about 200 tons of 35 per cent. ore, worth about \$25,000, and the total produce from the commencement may be estimated at about \$60,000. Their prospects are at the present moment much better than at any previous time.

The Ascot Mine, near Sherbrooke, has for the last few months been pro-

ducing ore for the market to a limited extent. Here the vein, which is nearly 8 ft. thick, though not carrying so rich ores as in the cases already specified, is more regularly impregnated with the ore, and is mined with unusual facility. During the few months this mine has been in operation it has produced, with very little cost for working, about 40 tons of ore, worth about \$1000. At other mining locations in the townships of Sutton, Melbourne, Durham, Mekham, and Upton, and in the Seignory of Les-Binières, some progress has been made in the extraction of ore, the total value of which may be estimated at \$8000 or \$10,000, but these operations must be regarded as only preliminary; and it is a highly gratifying feature in our mines that the ore obtained in testing them frequently suffices to defray the expense.

The mining adventurers in some instances purchase the land with the minerals, but this practice is to be deprecated both on public and private grounds. In most instances the mode of tenure is by lease of the minerals only for a considerable term of years, with payment of a royalty. The extraordinary success of the Acton Mines, and the excitement consequent upon the novelty of the discoveries, have hitherto rendered the proprietors of mineral lands exorbitant in their demands. A percentage of one-tenth of the gross proceeds, and in some instances a bonus besides, being required before granting a lease. In this respect the deplorable state of things described by your correspondent from Scotland, in a late number of the Journal, is strikingly applicable to Lower Canada. As, however, it has now become apparent that the Acton deposits are altogether exceptional in their character, and that the risk and expense of proving locations and of underground working will not admit of any such terms, there is a general disposition on the part of the proprietors to encourage mining adventures, as well as benefit themselves by moderate royalties. It is the duty of Government also, and of all public companies interested in these lands, to foster and encourage this new branch of industry, by assisting in the construction of roads, by low tariffs on railways, and by all other means in their power.—*Montreal, Jan. 17.* WILLSON AND ROBB, Mining Engineers.

The Miners' Association of Cornwall and Devonshire.

The second general meeting of the Miners' Association was held on Tuesday, the 4th inst., in the New Hall, Redruth. Mr. CHARLES FOX, the President, occupied the chair. Mr. ROBERT HUNT, the honorary general secretary, was called upon by him to read the minutes of the last general meeting, who then read portions of the minutes of the first general meeting, held on the 1st of February, 1861, in the Council Room of the Royal Institution, at Truro, when Mr. John St. Aubyn, one of the Members for the Western Division, occupied the chair.—Mr. Hunt remarked that it gave him much pleasure to state that, at the council meeting held this morning, a modification had been made of one of the rules adopted at the first general meeting. When he visited the district of St. Just, last autumn, he found that there were many intelligent lads desirous of joining the classes of the association, but they could not afford to pay even the small sum (3*s.* per annum) required for the working miner. He then undertook, on his own responsibility, and the council this morning had sanctioned the arrangement, that a working lad, not under 12 years nor above 16 years of age, introduced by a member, should be admitted to all the benefits of a class for a payment of 2*s.* 6*d.* per annum.

Mr. CHARLES FOX then called on Mr. ROBERT HUNT to read the council's report, which was as follows:—"The Miners' Association of Cornwall and Devonshire having completed its first year of more extended activity, it becomes the duty of your council to report the progress which has been made. Since the meeting held in Truro, on the 1st of February, 1861, two teachers have been actively engaged; Mr. Richard Pearce, as you are aware, undertaking the classes devoted to chemistry and mineralogy, and Mr. Charles Twiss, those which devote themselves to mechanics as applied to practical mining. The numbers of the students connected with the different classes have been as follows:—St. Just, class, 24; St. Agnes, 17; Camborne, 11; Redruth, 33; Tywardreath, 41. A course of lectures was delivered at Lostwithiel, by Mr. Richard Pearce, to a class consisting of 20 students. Owing, however, to the small number of miners resident in the town, and the difficulties attendant on the working of that class, it has been allowed, for the present, to cease. We hope, however, that we may be enabled to recommence operations in that district, especially as several working miners employed at the Royal Restormel Iron Mines have expressed themselves most desirous of continuing the studies they commenced. At Marazion, also, a class was formed, and instructions commenced by Mr. C. Twiss; but, owing principally to the great interest of the Volunteer movement, it was deemed advisable to suspend operations for a season. This class has been reorganised, and our chemical lecturer will commence his lectures there in a few days. Mr. Pearce has also recently begun to give instruction to a class formed in St. Day under favourable circumstances. At present this class numbers only 15; but we hope this will be considerably augmented, since those miners who have joined the class express themselves as being much interested. Tavistock has long been pressing for her share in the advantages which the Miners' Association has to offer. The names of not less than 20 miners have been received as ready at any time to join a class at Tavistock, and the names of 12 at Gunnis Lake. It was hoped at one time that the council might have been able to avail themselves of the aid of a resident teacher in that neighbourhood, who had the certificates of the Science and Art Department, and who was in all respects well qualified. Upon submitting the arrangements, however, to a local committee, your council was advised that it would be inexpedient to employ that gentleman in that district as our scientific teacher. Without greatly enlarged funds the association cannot increase the number of its teachers. Had they been enabled to have done this, they would not have hesitated to have sent Mr. R. Pearce into Devonshire, and to have employed the gentleman alluded to in the classes of this county. Appended to this report are the reports of the teachers to which we refer.

The expenses of the year have exceeded the income at our disposal. Subscriptions have not been forthcoming to the extent which was anticipated, and the outlay for chemicals and apparatus has necessarily been very large. All the apparatus and chemicals with diagrams, books, and drawing materials for the above-named classes had to be furnished; much of this now remains the property of the Miners' Association, and, consequently, a similar expenditure will not be required during the present year. The report of our educational secretary alludes to the very satisfactory manner in which the students of the classes of the Miners' Association passed the examination of the Department of Science and Art, in the divisions of chemistry, mineralogy, and mechanics. We hope that a result equally satisfactory will attend the examinations which will take place in May of the present year.

No examination has been held with the view of availing ourselves of the liberal offer of the Government School of Mines: a council scholarship, it will be remembered, having been placed at the disposal of your council. Your council cannot but feel that the great experiment they have tried has been a successful one. They have brought forward a considerable number of young men—on whom must depend much that belongs to the great mineral interests of Western England—under the influence of scientific instruction. This instruction has been devoted to the practical application of scientific truths; it has been the hands of a superior class of men, to which they can apply every-day business of life, and they cannot but have derived much from acquiring that system of method which inductive science is peculiarly fitted to teach.

The council would especially press upon the members of the association the importance of aiding in the establishment of museums devoted to the mineralogy of the county in each of the districts where classes have been established. It is also desirable that mining plans, sections, &c., should be collected and preserved, it being of the utmost importance that any peculiar phenomena observed in the lodes or cross-courses should be correctly delineated and recorded.

Mr. RICHARD PEARCE, the Lecturer on Chemistry and Educational Secretary, was then requested to read the Educational Report:—"During the past year five classes have been at work in the mining districts of St. Just, St. Agnes, Redruth, Camborne, and Tywardreath, and the number of students who have attended each class is as follows:—St. Just, 24; St. Agnes, 17; Camborne, 11; Redruth, 33; Tywardreath, 41: the total number being 126. Of these about 45 are miners, 40 mining agents, the remainder being mechanics, assayers, &c., who are interested in mining and metallurgical operations. My time has been occupied in giving courses of lessons at Tywardreath, Lostwithiel, Redruth, and Camborne, in visiting other classes periodically, and in giving a course of instruction at Truro in connection with the Royal Institution, which extended over a period of three months. The members of the St. Just class have recently received a course of lessons from Mr. Twiss on mechanics; they meet now regularly twice a week, for mutual instruction in those subjects which have been brought before them from time to time by Mr. Twiss and myself. The room in which they meet is furnished with every requisite for carrying out practically their studies in mineralogy and assaying. A collection of specimens illustrating the mineralogy and geology of the district is in the course of formation. This class has been established nearly three years, and the number of members has increased from the commencement. The St. Agnes class is working favourably, and the members have acquired by their diligence information of no small importance to them in their daily occupation; for the convenience of working the class is divided into groups, and it is so arranged that each group shall have an opportunity of devoting one evening a week to the analysis or assay of ores, or the study of the physical characters of minerals. A book is kept in the room, in which all assays and analyses are recorded. I received a letter from the secretary of the class, requesting my services again as soon as convenient. I visit them once in three weeks. The class has been working nearly two years. The Redruth class has increased in number since the beginning of the last year—my course of lectures was well attended, and arrangements are now being made to enable the members to carry out their studies during the absence of the lecturer. My course of lectures terminated at Camborne—the attendance was small, and they have made no arrangements towards securing the permanence of the class. In the early part of last year my time was occupied in giving a course of instruction at Tywardreath and Lostwithiel. The attendance at the lectures was very good at Tywardreath, and some of the young men (miners) have since been pursuing their studies with diligence. At Lostwithiel my lectures were well attended, considering that the number of miners in that district is comparatively few. Since I left, however, nothing has been done. Since the commencement of the present year we have succeeded in establishing a class at St. Day. The number of members is small (about 15), but they appear to be deeply interested in the subjects brought before them. At present I give them one lecture a week. I have also made arrangements to commence a course of instruction at Marazion on Friday next, so that we begin the year with two new classes. I would take this opportunity of soliciting the assistance of mine agents and adventurers, whose influence is of the utmost importance, in recommending our young miners to embrace the opportunities offered by the Miners' Association. The students who passed so creditably in the last examination (connected with the Department of Science and Art), particulars of which were given at our annual meeting, have received their prizes—the second silver medal, and books beautifully bound, treating on those subjects taught by the lecturers of the association.

Mr. ALMOND PAUL, at the request of the President, read the financial report, which appeared there were liabilities to the extent of 118*l.* 6*s.* 7*d.* On this the report remarks—"Considering that this is the first year of the society's active operations, when it has been necessary to incur a considerable preliminary expense for chemicals, mechanical apparatus, books, &c., for the use of the lecturers and the successful working of the association; that of necessity where the arrangements are carried out as they are, present with classes in several parts of the county, not a small amount must be expended in travelling and other expenses by the lecturers of the association; and that upwards of 20*l.* have been charged to this year's accounts which had been incurred on account of advertisements, stationery, printing, postage, and other incidental expenses for many

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GEOLOGISTS' ASSOCIATION.—Feb. 3 (Professor Tennant, F.G.S., President, in the chair). Eight new members were elected. The following papers were read:—1. "On the Cretaceous Group in Norfolk," by C. Rose, F.G.S., and following the general divisions of the chalk formation, as exhibited in Norfolk, and following the arrangement proposed by the late Mr. Woodward, he divided the beds into four chalk, medial chalk, hard chalk, and chalk marl. The upper and medial chalks are considered to comprise the distinction legitimate, inasmuch as the upper bed at Norwich contains the organic exuviae, which are not met with in the medial beds. The distinguishing characters of the several beds, with their peculiar fossils and the local limits of extension, were fully described, and the paper was illustrated by an elaborate section of the coast of the county.—2. "On the Plasticity and Odour of Clay," by C. Tomlinson,

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5, Warrford-court, Throgmorton-street, February 13, 1862.

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WIRE-ROPE TESTING.
PUBLIC TEST of A. J. HUTCHINGS AND CO'S PATENT
WIRE-ROPE at LIVERPOOL, FEBRUARY 27, 1861.
[From the Daily Post of March 1, 1861.]

On Wednesday, the 27th of February, a series of EXPERIMENTS on WIRE-ROPE took place at the Corporation Testing Works, King's Dock. The specimens tested were manufactured by well-known firms of A. J. HUTCHINGS and Co., of Millwall, London, and the Corporation of the Admiralty and various foreign Governments, the character of whose rope is so well known in this country, as well as all parts of the Continent. Capt. DUCRAIT, of H.M.S. *Hastings*, and a number of other gentlemen connected with shipping, were present to witness the experiments, all of which were considered highly satisfactory, and in every respect sustained the reputation of the manufacturers. The following are the results of the experiments:—

An 8 in. rope bore 70 tons WITHOUT BREAKING.
Circumference and breaking strain.

Size.	Hutchings and Co.'s wire-rope for ships' rigging. Tested Feb. 27, 1861.	Newall and Co.'s Test of Oct. 29, 1860.	Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.
2 1/4	10 1/2 tons	14 tons	14 tons
3 1/4	14 tons	18 tons	18 tons
4 1/4	18 tons	22 tons	22 tons
5 1/4	22 tons	26 tons	26 tons
6 1/4	26 tons	30 tons	30 tons
7 1/4	30 tons	34 tons	34 tons
8 1/4	34 tons	38 tons	38 tons
9 1/4	38 tons	42 tons	42 tons
10 1/4	42 tons	46 tons	46 tons

N.B.—The 2 1/4, 3, and 4 in. ropes were the sizes actually tested. The remaining sizes and strains are comparative.

THE ABOVE ROPES ARE FOR COLLIERY USE.

Size.	Hutchings and Co.'s wire-rope for ships' rigging. Tested Feb. 27, 1861.	Newall and Co.'s Test of Oct. 29, 1860.	Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.
2	5 tons 15 cwt.	7 tons 15 cwt.	8 tons 15 cwt.
2 1/2	11 " 14 "	14 " 14 "	16 " 14 "
3	16 " 10 "	18 " 10 "	20 " 10 "
3 1/2	22 " 8 "	26 " 8 "	30 " 8 "
4	28 " 10 "	34 " 10 "	40 " 10 "
4 1/2	34 " 10 "	42 " 10 "	50 " 10 "
5	40 " 15 "	50 " 15 "	60 " 15 "

N.B.—The 2 1/2, 3, and 4 in. ropes were the actual sizes tested. The remaining sizes and strains are comparative.

The above tests certified by Mr. McDonald the Superintendent of the Corporation Testing Works, Liverpool.

TEST OF WIRE-ROPE AT LIVERPOOL.
The value of Messrs. Hutchings's statement, relative to a test of their manufacture, will be properly estimated when it is known that the ropes were brought down from London specially prepared for the purpose, and not taken promiscuously from their stock, as the samples tested in October were.

The following, extracted from the *Mining Journal* of November 10, 1860, shows the relative strength of the different makers' ropes on that occasion. The samples tested were privately purchased some time previously, and applied for testing by Newall and Co.'s workmen. The test took place in the presence of representatives from the manufacturers, reporters for the press, and a large number of gentlemen connected with mining and shipping in Liverpool:—

SIZE OF ROPE TESTED.

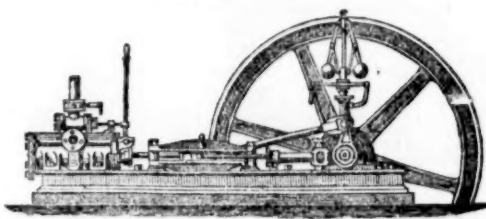
Size.	Garnock, Bibby, and Co.'s broke at	18 tons 5 cwt.	8 tons 15 cwt.
R. S. Newall and Co.'s	16 " 10 "	7 " 15 "	8 " 15 "
A. J. Hutchings and Co.'s	11 " 10 "	5 " 10 "	6 " 10 "

From this it will be seen that the breaking point of Garnock, Bibby, and Co.'s ropes was on the average 13 per cent. over the guaranteed strain, while those of Hutchings and Co. were 50 per cent. below it.

GARNOCK, BIBBY, AND CO.,
SWAN HEMP AND WIRE-ROPE WORKS, CHAPEL STREET, LIVERPOOL.
Flat and round wire-ropes of steel and charcoal iron for mines, inclines, &c., of first quality wire, and highest standard of strength.

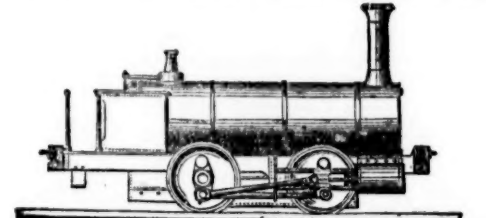
THE PARAFFIN, OR MINERAL OIL SAFETY GAUGE,
made for the Asphaltum Company (Limited), ENABLES CONSUMERS TO AVOID PURCHASING PARAFFIN OR MINERAL OIL of an EXPLOSIVE or DANGEROUS KIND. Price, with a tin oil holder, 1s. 6d. each; forwarded by post upon receipt of 18 stamps.—Apply at the offices of the company, 34, Great Winchester street, London E.C.

MESSRS. E. PAGE AND CO.,
VICTORIA WORKS, BEDFORD,
AND LAURENCE POUNTNEY PLACE, CANNON STREET, LONDON
MANUFACTURERS OF



HIGH PRESSURE STEAM ENGINES,
from 2 1/2 to 30 horse power, and upwards, adapted for MINING and GENERAL PURPOSES. Prices and full particulars sent on application.

LOCOMOTIVE, STATIONARY, AND PORTABLE
STEAM ENGINES.
CONTRACTORS' WAGONS, DOBBIN CARTS, BARROWS, and EVERY DESCRIPTION of RAILWAY and CONTRACTORS' PLANT, &c.



CHEAP LOCOMOTIVES for MINERAL RAILWAYS and OTHER PURPOSES. HUGHES and MARCH, ENGINEERS and MANUFACTURERS of RAILWAY PLANT, and EVERY KIND of MACHINERY, FALCON WORKS, LOUGHBOROUGH.

These engines are exceedingly useful in all cases where heavy loads have to be carried up steep inclines. They are fitted in the best style, and with every requisite. Messrs. HUGHES and MARCH, Falcon Works, Loughborough; or E. EDWARDS, Esq., C.E., 13, Beaufort-buildings, Strand, London.

MAKERS of the IMPROVED HORSE ENGINE, by which full power of the horse is given out without friction. It is applicable in all cases where horse power is required.

PATENT SAFETY FUSE.—THE GREAT EXHIBITION PRIZE
MEDAL WAS AWARDED to the MANUFACTURERS of the ORIGINAL SAFETY FUSE, RICKFORD, SMITH, DAVEY, and PRYOR who beg to inform Merchants, Mine Agents, Railway Contractors, and all persons engaged in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE has now a thread wrought into its centre, which, being patent right, infallibly distinguishes it from all imitations, and ensures the continuity of the gunpowder.

This Fuse is protected by a Second Patent, is manufactured by greatly improved machinery, and may be had of any length and size, and adapted to every climate. Address.—RICKFORD, SMITH, DAVEY, and PRYOR, Tuckingmill, Cornwall.

DAVEY'S PATENT BLASTING POWDER,
MANUFACTURED BY DAVEY BROTHERS AND CO.,
NANCEKUR POWDER WORKS, TUCKINGMILL, CORNWALL.

This blasting powder possesses the following advantages over every other in use:—Its COMBUSTION is SLOWER and MORE PERFECT when confined in the hole, it is MORE IMPERVIOUS to MOISTURE, PRODUCES LESS SMOKE, is LESS DANGEROUS, it BURSTS as MUCH ROCK with a CHARGE OCCUPYING the SAME or even LESS SPACE, and its WEIGHT being TWENTY to TWENTY-FIVE PER CENT. LESS than ordinary gunpowder, a SAVING of ONE-FOURTH the COST is EFFECTED.

DAVEY BROTHERS and Co. beg to state that this powder is specially made for blasting, and from its slow combustion is not adapted for projectiles. They would, therefore, caution consumers not to be induced by interested parties to put it to a fallacious trial, by firing a ball from a mortar, which is no test of its explosive force when confined.

ATYOUN'S PATENT SAFETY CAGE AND HOIST.

CHANGE OF LICENSE FEE.
The present LOW RATE of LICENSE FEE, £1 per cage, will be CONTINUED till the CLOSE of the INTERNATIONAL EXHIBITION, where facilities will be afforded to parties interested to assure themselves of the value of the invention. A FULL SIZED SAFETY CAGE will be there EXHIBITED in ACTION, and may be subjected to whatever tests parties may desire. Also, a VARIETY of MODELS, SHOWING the ADAPTATION of the SAFETY PRINCIPLE to CAGES of VARIOUS CONSTRUCTIONS, and to GUIDE RODS of IRON as well as of WOOD.

Parties having thus had an opportunity of assuring themselves of the trustworthiness of the safety cage, and of providing themselves with all the licenses they may require at a low figure, the patentee proposes, immediately on the close of the Exhibition, to raise the license fee to £5, £7, and £8 per cage, according to the weight it is calculated to carry. This will enable him to set on foot an active canvass for the introduction of the safety cage into every mining district of the kingdom, a measure plainly impossible with the present low fee of £1.

The patentee has also the satisfaction of saying that he has now made arrangements with the well-known firm, Messrs. James Tod and Son, engineers, Edinburgh, which will enable him to furnish safety cages, calculated to carry from 12 to 15 cwt. of coal or ironstone, at £10 each, and other sizes in proportion. As the carriage of a cage by rail to the central parts of England does not exceed 10s., the cage may be delivered in almost any locality for a sum not exceeding 10 guineas, exclusive of the license fee, which at present is only 1l. Coal and ironmasters, therefore, would do well, at this time, to provide themselves with one, which, on being tried in their pits and found to answer, would serve as a model for making others. By sending the order through the patentee, they will have the advantage of his personal superintendence.

To those who prefer getting them made on their own premises, working drawings or models will be sent, which will enable any ordinary workman to construct the safety cage easily.

In view of any further attempt of the Legislature to make the use of safety cages imperative, it would seem advisable to secure licenses at the present low rate for as many as are required.

Apply to the patentee, ROBERT ATYOUN, 3, Fettes-row, Edinburgh.

PATENT PLUMBAGO CRUCIBLES.

The crucibles manufactured by the PATENT PLUMBAGO CRUCIBLE COMPANY have been in successful use for many years by some of the largest ENGINEERS, BRASSFOUNDERS, and REFINERS in this country and abroad. The great SUPERIORITY of these melting pots consists in their capability of melting on the average 35 to 40 pourings of the most difficult metals, and a still greater number of the ordinary character, some of them having actually been worked for the EXTRAORDINARY number of 96 heats. They are unaffected by change of temperature, never crack, and become heated much more rapidly than any other kind, thereby SAVING more than FIFTY PER CENT. in fuel, time, and labour. Lasting as they do for such a length of time, the saving of waste is also very considerable.

The company have recently introduced a CRUCIBLE SPECIALLY ADAPTED FOR MALLEABLE IRON MELTING, the average working of which has proved to be about seven days.

CRUCIBLES for STEEL MELTING are also made, which save nearly 1 1/2 ton of fuel to every ton of steel fused.

The Patent Plumbago Crucible Company likewise manufacture and import clay crucibles, muffles, portable furnaces, &c., stove backs, all descriptions of fire-standing goods, and every requisite for the assayer and dentist.

For lists, testimonials, &c., apply to the Patent Plumbago Crucible Company, Battersea, Works, London, S.W.

ACCIDENTS ARE UNAVOIDABLE!

THE MINING SHARE LIST.

DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
4000	Bedford United (copper), Tavistock	2 6 8	5 1/2	5 1/2	12 11 6	0 3 0-Dec. 1861
240	Boscombe (tin), St. Just	20 10 0	60		35 10 0	1 5 0-Dec. 1861
200	Botalack (tin, copper), St. Just	91 5 0	250		443 5 0	2 10 0-Feb. 1860
1000	Carn Brea (copper), Illogan	15 0 0	77 1/2	70 75	271 10 0	2 0 0-Jan. 1862
200	Cefn Cwm Brwyno (lead), Cardiganshire	33 0 0	33		9 0 0	4 0 0-April, 1861
2450	Cook's Kitchen (copper), Illogan	17 9 3	30	28 30	1 0 0	0 7 0-Jan. 1862
1250	Copper Hill (copper), Redruth	48 0 0	107	105 110	4 10 0	2 0 0-Jan. 1862
12000	Copper Miners of England	25 0 0	25		7 1/2 per cent.	Half-yrly.
350000	Ditto (stock)	8 0 0	24	26 28	6 12 0	0 7 0-Jan. 1862
1000	Creaghwaun and Penkell, St. Columb	7 10 0	20		6 18 0	0 15 0-Jan. 1862
867	Cwm Erfin (lead), Cardiganshire	60 0 0	200		235 10 0	4 0 0-Jan. 1862
128	Cwmystwith (lead), Cardiganshire	300 0 0	180		142 0 0	5 0 0-Jan. 1861
280	Darwent Mines (all-lead), Durham	1 0 0	410	405 415	782 0 0	6 0 0-Jan. 1862
1024	Devon Gt. Con. (cop.), Tavistock [S.E.]	1 0 0	410		687 10 0	9 0 0-Feb. 1862
358	Dolcoath (copper), Camborne	128 17 6	550		5 0 0	0 2 6-Nov. 1861
3000	Dyrham (lead), Wales	12 6 10	10		96 0 0	3 0 0-Jan. 1862
512	East Bassett (cop.), Redruth [S.E.]	2 14 6	31	30 1/2 30 3/4	79 10 0	0 15 0-Jan. 1862
6144	East Caradon (copper), St. Cleer [S.E.]	32 0 0	45		20 5 0	0 10 0-May, 1861
300	East Darron (lead), Cardiganshire	18 6 0	14 1/2	14 1/2 15	0 14 0	0 3 0-Sept. 1861
1400	Evan Mining Co. (lead), Derbyshire	40 0 0	6 1/2	6 1/2	7 10 0	0 15 0-Sept. 1861
2800	Foxdale (L.) [2550 £25 pd., 240 £20 pd.]	35			38 9 0	1 5 0-Feb. 1862
5000	Frank Mills (lead), St. Just	3 18 6	4 1/2	4 1/2	7 10 0	0 15 0-Sept. 1861
6000	Great South Toisus [S.E.], Redruth	0 14 6	4 1/2	4 1/2 4 3/4	379 10 0	2 0 0-Dec. 1861
1798	Great Wheel Fortune, Breage	18 6 0	14 1/2	14 1/2 15	12 0 0	0 10 0-Jan. 1862
5000	Great Wh. Vor (tin, cop.), Helston [S.E.]	40 0 0	6 1/2	6 1/2	1 12 6	0 7 6-Sept. 1861
1024	Herodford (id.), near Liskeard [S.E.]	8 10 0	39	37 39	18 0 0	1 15 0-Feb. 1862
1000	Hibernian Mining Company	92 6 2	27 1/2		7 10 0	0 15 0-Sept. 1861
400	Liburnia (lead), Cardiganshire, Wales	18 15 0	110		379 10 0	2 0 0-Dec. 1861
9000	Marke Valley (copper), Cardon	4 10 0	10 1/2	10 1/2	12 0 0	0 6 0-Jan. 1862
1800	Minera Mining Co. (L.), Wrexham	5 0 0	170		8 12 0	3 10 0-Jan. 1862
20000	Mining Co. of Ireland (cop., lead, coal)	7 0 0	16 1/2	17 1/2	14 7 11	0 7 0-Jan. 1862
640	Mount Pleasant (lead), Mold	4 0 0	35		17 10 0	1 0 0-Jan. 1862
6000	New Birch Tor and Vifler Consols	1 6 0	2 1/2		0 3 6	0 1 0-Sept. 1861
6000	North Downs (copper), Redruth	2 3 4	5 1/2	5 1/2 5 3/4	0 7 6	0 5 0-Dec. 1861
1366	North Rambler, Redruth	2 7 6	6		0 10 0	0 10 0-Mar. 1861
5000	Orehead (lead), Flintshire	0 8 0	1 1/2		0 9 8	0 4 0-Jan. 1862
6400	Par Consols (cop.), St. Blazey [S.E.]	1 2 6	8 1/2	8 1/2 9	38 9 0	5 0 0-Nov. 1861
200	Parya Mines (copper), Anglesey [L.]	50 0 0			12 10 0	2 10 0-Sept. 1861
1772	Poiborro (tin), St. Agnes	5			6 19 6	0 10 0-Dec. 1861
1120	Providence (tin), Uny Lelant [S.E.]	10 6 7	44	42 43	41 15 0	1 0 0-Nov. 1861
16	Rhosonnet (tin), Uny Lelant [S.E.]	50 0 0			1250 0 0	100 0 0-Quarterly
512	South Caradon (cop.), St. Cleer [S.E.]	1 5 0	325	320 325	366 0 0	5 0 0-Jan. 1862
412	South Tolgus (cop.), Redruth, Cornwall	8 0 0	54		104 10 0	1 0 0-Jan. 1862
496	South Wheel Franks, Illogan [S.E.]	18 18 6	112 1/2	100 105	358 5 0	1 0 0-Jan. 1862
280	Sparrow Moor (tin, copper), St. Just	31 17 9	52 1/2		9 15 0	1 0 0-Jan. 1862
910	St. Ives Consols (tin), St. Ives	8 0 0	28	27 29	484 10 0	0 10 0-Nov. 1861
9600	Tamar Con. (all-ld.), Beeralston [S.E.]	4 10 0	2	1 1/2 1 3/4	5 6 0	0 2 6-Jan. 1861
6000	Tincroft (cop., tin), Pool, Illogan [S.E.]	9 0 0	8 1/2	8 1/2 9	11 3 6	0 5 0-Feb. 1862
200	Trumpet Consols (tin), near Helston	67 10 0	100		53 0 0	1 0 0-Aug. 1861
4200	Vigra and Cleau (copper), L. E.	2 15 0	25		1 12 6	0 15 0-Jan. 1862
1024	Wendron Consols (tin), Wendron	11 13 10	13 1/2	13 1/2 14	8 12 0	1 0 0-Jan. 1861
6000	West Bassett (copper), Illogan [S.E.]	1 10 0	13 1/2	12 1/2 13 1/2	22 0 0	0 5 0-Sept. 1861
60	West Burton (id.), Yorkshire	50 0 0			14 10 0	3 0 0-Jan. 1862
1024	West Caradon (cop.), Liskeard [S.E.]	5 0 0	41	40 42	100 11 3	1 0 0-Feb. 1862
4400	West Fowey Consols (tin and copper)	7 10 0	4		0 17 0	0 3 0-Jan. 1862
400	W. Wh. Seton (cop.), Camborne [S.E.]	47 10 0	200	280 285	338 0 0	8 0 0-Feb. 1862
512	Wheel Bassett (copper), Illogan [S.E.]	5 2 0	105	97 1/2 102 1/2	679 10 0	3 0 0-Feb. 1862
256	Wheel Buller (cop.), Redruth [S.E.]	5 0 0	80	72 1/2 77 1/2	929 0 0	2 0 0-Mar. 1861
2900	Wh. Clifford Amalgamated (cop.), Gwennap	30 0 0	33	31 1/2 32 1/2	26 0 0	10 0 0-Oct. 1861
2000	Wheel Falmouth and Sperris	2 5 0	8		0 10 0	0 10 0-Feb. 1861
128	Wheel Friendship (copper), Devon	50 0 0	90		3400 10 0	5 0 0-Feb. 1861
512	Wheel Wadon (tin), Gernoe	3 10 0	18		12 0 0	1 0 0-Jan. 1862
4900	Wheel Ludcott (tin), St. Ives	2 10 0	2 1/2	2 1/2 2 3/4	1 12 0	0 1 0-Jan. 1862
896	Wh. Margaret (tin), Uny Lel. [S.E.]	9 17 6	45	43 48	2 16 0	2 0 0-Feb. 1862
1024	Wh. Mary Ann (id.), Menheniot [S.E.]	8 0 0	16	15 1/2 15 3/4	54 17 6	10 0 0-Dec. 1861
80	Wheel Owles, St. Just, Cornwall	70 0 0	300		285 13 0	5 0 0-Nov. 1861
396	Wheel Seton (tin, copper), Camborne	58 10 0	127 1/2	122 124	184 15 0	1 10 0-Feb. 1862
1040	Wh. Trevelyan (all-ld.), Liskeard [S.E.]	5 17 0	20	18 19	44 10 0	1 15 0-Feb. 1862
8000	Wicklow (copper), L. Wicklow	5 0 0	54 1/2	53 1/2 54	43 17 6	2 0 0-Oct. 1861

[* Dividends paid every two months. † Dividends paid every three months.]

MINES WITH DIVIDENDS IN ABEYANCE.

700	Aberdovey (silver-lead), Merioneth	1 10 0	30		0 10 0	0 10 0-Mar. 1859
5120	Alfred Consols (cop.), Phillack [S.E.]	3 3 6	7 1/2		20 3 0	0 2 6-April, 1859
1900	Brightside & Froggatt Grove, Derbyshire	3 0 0	3 1/2		3 0 0	0 3 0-April, 1856
2048	Carnyorth (tin), St. Just	3 15 0	13 1/2		0 19 0	0 2 0-Sept. 1860
2500	Central Miners (lead), L. E.	0 15 0	5 1/2		0 4 6	0 1 6-Sept. 1859
6000	Charlotte United, Perranarabuth	20 0 0	75 1/2	75 80	88 0 0	2 0 0-Sept. 1859
256	Condroff (cop., tin), Camborne	5 11 6	6		0 10 0	0 2 6-Feb. 1862
4076	Devon and Cornwall (cop.)	5 11 6	6		0 10 0	0 2 6-Feb. 1862
672	Ding Dong (tin), Gwulva	39 2 6	15	12 1/2 15	16 7 6	1 0 0-March, 1857
2800	Drake Walls (tin, copper), Calstock	2 1 0	1 1/2		0 13 6	0 10 0-Sept. 1857
2048	East Falmouth (all-ld.), Kenwyn, Kea	3 5 0	4 1/2		0 7 6	0 2 6-Jan. 1858
128	East Pool (tin, copper), Pool, Illogan	24 5 0	240	200	305 0 0	2 10 0-Aug. 1858
2048	East Wheel Lovell (tin), Wendron	2 13 6	8		0 5 0	0 5 0-July, 1859
4940	Fowey Consols (copper), Tywardreath	4 0 0	5		41 9 3	0 2 6-June, 1860
486	Graham and St. Aubyn (cop.) [S.E.]	49 10 0	16 1/2		33 0 0	1 0 0-July, 1860
118	Great Wadon (tin), Gernoe	3 10 0	10		22 10 0	7 10 0-Feb. 1857
1024	Hingston Down Con. (cop.), Gwennap	4 10 0	3 1/2	2 3/4	2 16 0	2 0 0-March, 1858
8000	Kelly Bray (lead, copper), Callington	4 10 6	10 1/2	1 1/2 1 3/4	0 6 0	0 2 0-Feb. 1858
20	Laxey Mining Company, Isle of Man	100 0 0	1200		1420 0 0	50 0 0-June, 1857
160	Levant (copper, tin), St. Just	2 10 0	95		1091 0 0	6 0 0-May, 1860
8000	Mendip Hills (lead), L. Somerset	3 15 0	1 1/2		2 1 0	0 2 6-May, 1860
470	Newtownards Mining Co., Co. Down	50 0 0	35		56 0 0	1 0 0-Sept. 1858
6000	North Great Wheel, Breage	1 3 0	1 1/2		0 2 0	0 2 0-May, 1860
512	Rosewarne United (cop., tin), Gwennap	19 6 4	19 1/2		33 10 0	1 0 0-Sept. 1860
12900	Sordridge Con. (cop.), Whitchurch [S.E.]	0 16 0	11 1/2		0 10 0	0 2 6-July, 1857
128	South Cruinis (copper), St. Agnes	19 0 0	28 1/2		60 0 0	20 0 0-Feb. 1858
2000	St. Day United (tin and cop.), Redruth	3 0 0	3 1/2		0 13 0	0 3 0-March, 1860
8000	Tolvadden (copper), Marazion	0 6 0	2		0 13 0	0 3 0-March, 1860
572	Trelyon Consols (tin), St. Ives	11 10 0	11		7 0 0	0 10 0-Sept. 1860
20000	Valley of Towy (lead), Carmarthen [S.E.]	0 13 6	1 1/2		0 5 0	0 10 0-July, 1858
256	West Damsel (copper), Gwennap	87 0 0	50	57 1/2 60	45 0 0	1 0 0-May, 1860
1024	West Providence (tin), St. Erth	16 15 0	3 1/2		33 1 0	0 10 0-April, 1857
4096	Wheel Edward (cop.), Calstock [S.E.]	7 7 6	2 1/2	2 1/2 1 1/2	0 5 0	0 5 0-March, 1858
1024	Wheel Gwyls (tin), Perranarabuth	2 4 0	15 1/2	14 1/2 15 1/2	1 12 0	0 7 6-Nov. 1859
1024	Wheel Kitty (tin), Uny Lelant [S.E.]	1 7 2	10 1/2	10 1/2 11	8 0 0	0 10 0-Sept. 1860
1024	Wheel Kitty (tin), St. Agnes	1 7 2	1	1 1/2	0 18 6	0 2 0-July, 1860
1024	Wheel Mary (tin, copper)	16 3	2	1 1/2	280 5 0	7 0 0-March, 1860
100	Wheel Mary (tin), Lelant	2 2 6	440		10 2 6	0 7 6-Jan. 1854
1022	Wheel Tremayne (tin, cop.), Gwennap	13 2 6	5		10 2 6	0 7 6-Jan. 1854

FOREIGN MINES.

2464	Burra Burra (cop.), South Australia	5 0 0	116		265 0 0	5 0 0-June, 1861
12000	Cobre Copper Co. (cop.), Cuba [S.E.]	40 0 0	34		98 12 0	1 0 0-Jan. 1862
10000	Copiapu Mining Company, Chile [S.E.]	16 0 0	8		6 8 0	0 5 0-Jan. 1861
10000	East Indian Coal, Calcutta [L.]	10 0 0	10		7 1/2 per cent.	Yearly.
7000	English and Australian [S.E.]	5 0 0	3 1/2		1 5 0	0 2 6-Aug. 1861
25000	Gen. Mining Assoc., Nova Scotia [S.E.]	20 0 0	24		18 5 0	1 0 0-June, 1861
6000	Kapunda Mining Co., Australia [S.E.]	1 0 0	2 1/2		0 8 0	0 2 0-June, 1861
12000	Linares (id.), Pono Ancho, Spain [S.E.]	2 0 0	8 1/2	8 1/2	0 18 0	0 3 4-July, 1861
10000	Lusitanian (of Portugal) [S.E.]	3 0 0	2	1 1/2 1 1/2	0 9 6	0 1 6-July, 1861
13815	Marquita and New Granada [S.E.]	1 0 0	3		0 9 6	0 1 6-July, 1861
100000	Port Phillip (gold), Clunes [S.E.]	1 0 0	1 1/2	1 1/2 1 1/2	0 5 6	0 1 6-Jan. 1862
11000	St. John del Rey [L.], Brazil [S.E.]	15 0 0	66	61 65	46 5 0	3 0 0-Dec. 1861
20000	West Canada Mining Company [L.]	1 0 0	1 1/2		0 2 0	0 2 0-June, 1860

FOREIGN MINES WITH DIVIDENDS IN ABEYANCE.

10000	Alten and Quenangen (L.) [L.] [L.]	4 10 0	3		4 5 0	0 15 0-Nov. 1853
10000	Barrier Land, Min. & Co. [S.E.]	4 10 0	3 1/2		15 per cent.	May, 1859
10000	Pontbriand (all-lead), France [S.E.]	20 0 0	4		1 0 0	1 0 0-June, 1855
43174	St. Mexican (all-ld.), Mexico [S.E.]	28 5 0	9	9 1/2 9 1/4	1 16 0	0 4 0-Feb. 1853

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
20000	Australian (copper), South Australia [S.E.]	7 7 6	1	1 1/2	Sept. 1858
75000	Bon Accord, South Australia (copper) [L.] [S.E.]	0 17 6	1 1/2	1 1/2 1 1/2	Dec. 1860
25000	Capula (silver), Mexico [L.] [L.]	0 10 0	1		Jan. 1862
6000	Central American (silver) [L.]	5 0 0	12		Feb. 1859
17000	Central Italian (copper) [7000 £ paid]	0 6 0	—		Jan. 1859
60000	Clarendon Consols (copper), Jamaica [S.E.]	0 17 6	3 1/2		Jan. 1861
10000	Copiapu Smelting [L.], Chili	10 0 0	8 1/2		Fully paid
75000	Dun Mountain (copper), New Zealand [L.] [S.E.]	1 0 0	1 1/2	1 1/2	Fully paid
25000	East del Rey, Brazil [L.] [L.]	1 0 0	1 1/2		Sept. 1861
30000	East Kongsberg Native Silver Mining Co. of Norway [L.] [L.]	1 0 0	3 1/2		April, 1861
15000	Elbe Colliery Company [L.] [L.]	0 5 0	3 1/2		Dec. 1861
80000	Ellerslie and Bardowie, Jamaica	0 18 0	1 1/2		July, 1859
8000	English and Canadian Mining Company [L.]	5 0 0	2		Fully paid
25000	Fortuna (lead), Spain [L.] [S.E.]	2 0 0	2 1/2	2 1/2	Fully paid
80000	Great Northern (copper), South Australia [L.] [S.E.]	1 0 0	1 1/2	1 1/2	
34000	Hindustan (copper), Bengal [L.] [L.]	1 0 0	—		Nov. 1861
4000	Hope Silver-Lead and Copper Mining Co. [L.], Jamaica	25 0 0	—		Fully paid
60000	Imperial Thessaly (lead, &c.), Thessaly [L.] [L.]	0 10 0	3 1/2		June, 1860
10000	Isurbits Colliery Company [L.] [L.]	0 10 0	—		Dec. 1861
100000	Montes Aereos (gold), Brazil [L.] [L.]	1 0 0	1 1/2		Jan. 1862
30000	Lagunazo (sulphur, copper), Portugal [L.] [L.]	0 15 0	1 1/2		Dec. 1861
60000	New Granada (gold), South America [S.E.]	1 0 0	1 1/2		Fully paid
10000	New Grand Duchy of Baden (silver-lead), near Freiburg	1 0 0	1 1/2		Nov. 1859
10000	North Rhine Copper of South Australia [L.] [L.] [S.E.]	0 15 0	3 1/2		Nov. 1861
15000	Pachuca Silver Mining Company, Mexico [L.] [L.]	0 10 0	—		April, 1861
60000	Santa Barbara (gold), Brazil [L.] [L.]	0 5 0	3 1/2		Nov. 1861
60000	Scottish Australian Mining Company [L.] [L.]	0 10 0	1 1/2	1 1/2 1 1/2	Nov. 1859
10000	South Europe Mining Company, Spain [L.] [L.]	3 0 0	—		May, 1860
40000	St. John's United (copper) (lead), Newfoundland [L.]	1 0 0	—		Fully paid
45000	Victor Emanuel, Italy [L.], (30,000 Pref. Shares, 15,000 ord.)	1 0 0	1 1/2		Fully paid
1000	Western Africa Malachite (copper) [L.]	110 0 0	—		Oct. 1861
12000	Wheat Ellen, South Australia [L.] [L.]	4 0 0	4 1/2		July, 1861
25425	Wheat Jamaica (copper)	1 0 0	18 1/2		Fully paid
90000	Worthing (copper), South Australia [L.] [S.E.]	2 0 0	3 1/2		Fully paid